



Innovation Alley

compiled by Fastener World

Japanese Precise Gauge Develops Auxiliary Fixing Hardware to Improve Fastening Efficiency

Optical measuring machine maker Precise Gauge developed and launched sales of an auxiliary fixing hardware called "Inner Grip Ring". With the ring, the user can assemble or take out parts without removing the screws. After embedding the ring into a pre-dilled hole on the part and assembling the part with a screw, the ring expands and presses the inner portion of the hole and stays put. When the user loosens up the screw, the pressing force weakens and the part can be taken out. This will prevent missing or dropping screws and improve operational efficiency.



HILTI's First Tool Exclusively Designed for the Emerging Markets

Hilti launched the new UD 4 Corded Drill Driver developed with Hilti standards that was entirely created for the META (Middle East, Turkey and Africa) region to meet the requirements of the emerging markets.

The UD 4 is designed to perform any required job on construction sites and in the workshop; it can drill a high number of holes per day for the same application. The lightweight and compactness of the tool will support the user in making repeated tasks easier with less tiring. The tool is used for wood and steel applications ranging from alloyed steel to stainless steel.



Along with the tool's launch; Hilti developed drill bits to meet the different requirements based on customer's preference. In addition to this top performing drill bit, the range also includes different

drill bits for different applications that provide customers great performance at a very competitive price.

Japanese Sinwa Mekki Develops "Sinwa ZiNT" Zn-Ni Alloy Electroplating with 20 Folds Corrosion Resistance

"Sinwa ZiNT" is a result of the technical collaboration between Sinwa Mekki and the American Pavco. This electroplating technology has 2 layers. The lower layer is the Zn-Ni alloy electroplating layer that is 10 times more corrosion resistant than Zinc electroplating; on top of that is the "Topcoat" coating developed by Pavco. As such, corrosion resistance is leveled up to 20 folds. Iron rust resistance can last up to 2,000 hours, and zinc rust resistance up to 1,000 hours. This is the first time that the Japanese electroplating industry introduces Topcoat from a top American surface treatment company.



Hafren Offers Various Security Screws

The need to safeguard against theft, vandalism and tampering is an increasingly essential part of many design specifications. To counter these threats, Hafren is constantly keeping one step ahead of intruders by manufacturing a comprehensive range of vandal and tamper resistant fixings and fasteners which have a varied range of uses.



Hafren's range includes time and labor saving self-tapping, self-drilling and thread forming screws. For fixing sheet metal to wood and other steel construction, Hafren has also developed self-drillers equipped with its 6-Lobe Pin security drive. Drilling tips provide a fast and easy application eliminating the need to pre-drill and the 6-Lobe Pin is great for higher torque applications.

Hafren has also developed a specialized thread forming screw (Power6™) ideal for automotive and fencing applications. This tri-lobular self-threading screw eliminates the need for nuts, reducing labor costs & installation time. The Power6™ Security Screws also feature a unique shaped 6-Lobe Pin drive, providing a higher level of security.

Japanese Fukui Byora Rolls out PLX Blind Rivet Used for Resin and Soft Materials

PLX blind rivet can tighten up soft materials like automotive interiors, building materials, and rubber. The sleeves of the blind rivet can split in 4 directions to fasten soft materials. A single size of PLX blind rivet can cope with multiple widths of soft materials, reducing parts count and improving work efficiency. The company increased the pullout strength of the mandrel head as well to prevent loosening of the mandrel head after fastening. This mandrel head fastening achieves a simple and easy water-proof effect and prevents abnormal noise. Additionally, users can choose the special large flange type PLX blind rivet to further increase retention level.



New Quik Drive® PRODW Drywall System Provides Faster, Easier Drywall Installation in a Sturdy, Lightweight Tool

Simpson Strong-Tie, the industry leader in engineered structural connectors and building solutions, has developed a new, lightweight auto-feed screw driving system for drywall applications, expanding its popular Quik Drive product line. The new Quik Drive PRODW drywall system has a lighter-weight tool body with enhanced durability and ergonomics so drywall installations can be completed more efficiently and cost-effectively.

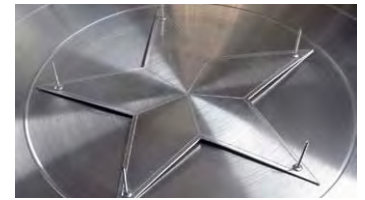


Builder and contractor benefits of the Quik Drive PRODW drywall system include a collated-screw feed mechanism designed to provide consistent and efficient screw delivery, a self-locking depth adjustment for accurate drive depth and a fully rotatable driver adapter for fastening in hard-to-get areas. Curved, collated strips hold screws away from the tool's nose to prevent scratching or marring the surface of materials, and a hardened-steel feed pawl improves reliability.

Quik Drive auto-feed screw driving systems allow one-handed operation for improved speed, safety and ease of use, and the Quik Drive PRODW drywall system's lighter weight results in less user fatigue and improved driving for fewer delays or wasted screws on the worksite.

Goebel Fasteners Introduces Peel Type "STAR" Rivets

Goebel's Peel Type "STAR" Rivets are designed with an aluminum body and a steel zinc plated mandrel. The aluminum body protects the rivet from corrosion.



The rivet gets its name from a special folding mechanism: when you install a STAR rivet, it folds into four separate legs, resembling a large, incandescent, luminous point in the night sky.

The special folding mechanism securely clamps two materials together. The STAR rivets are produced specifically for work with brittle and soft materials. The four legs create a large blindside bearing surface, thereby significantly lowering the risk of the rivet breaking through or sinking in thin and soft materials.

The STAR rivets are most commonly used when working with wood or plastic materials.

New microPEM® Flaring Standoffs for Compact Electronic Assemblies Provide Ideal Miniature Fastener Solutions to Attach and/or Space Components

New microPEM® MSOFS™ flaring standoffs from PennEngineering® provide ideal miniature fastener solutions to attach and/or space components in compact electronic assemblies. They install permanently in thin panels of any hardness and material, including stainless steel, other metals, plastics, and printed circuit boards. A unique flaring feature adds value by allowing for installation into multiple panels.



These standoffs additionally have been engineered with a minimal footprint enabling reduced centerline-to-edge designs, especially suiting attachment applications where available space for fasteners may be limited. Their extremely small and reusable threads reliably accept mating hardware to complete final component attachment.

The RoHS-compliant MSOFS flaring standoffs join a growing family of microPEM fasteners for compact electronics. Applications include wearables, laptops, tablets and eReaders, smartphones, automotive electronics, and a wide range of handheld devices.

PEM® PFC4™ Self-Clinching Captive Panel Screws Enable Easy Access to Stainless Steel Enclosures Without Loose-Hardware Risks

PEM® PFC4™ self-clinching captive panel screws from PennEngineering® install permanently into stainless steel enclosures to enable easy access whenever necessary and eliminate risks associated with loose screws. The captivated screw remains reliably in place where designed in a door or panel and will not loosen, fall out, or damage internal components. Expanding their application potential, these spring-loaded fastener assemblies comply with UL 60950 equipment access standards.

PFC4 captive panel screws will install successfully in stainless steel sheets as thin as .060" / 1.53mm with hardness up to HRB 88. A shoulder provides a positive stop during installation and the fastener ultimately will be flush on the opposite side of the sheet for a clean and unmarred appearance. A fully recessed head in the fastened position allows for tool-only access.

The fasteners are manufactured from 400 Series stainless steel providing corrosion resistance comparable to zinc-plated steel. They are available in assorted screw lengths and in thread sizes #4-40 through #10-32 and M3 through M5. All PFC4 fasteners are RoHS compliant.



Customized C-Washers Available from Boker's



Boker's, a manufacturer of precision metal stampings, washers, spacers and shims, offers a wide variety of custom C-washers to its customers. C-washers obtain their name for being in the shape of a "C" as they have a slot cut from the center to the perimeter allowing the washer to be removed, replaced or inserted without completely removing the fasteners.

C-washers are designed to slide in and out of position on a bolt or shaft in a partially completed assembly. They can also be used as a retention device on a grooved shaft to keep components in place.

C-washers can be produced in over 2,000 commonly specified and difficult to find materials including low-carbon steel sheet, various spring steels, stainless steel, aluminum, brass, copper and nickel silver. Non-metallic materials include ABS, acetal, polyester, nylon, MD nylon, polycarbonate, fiber, polyethylene and various NEMA grade phenolics.

New Hydraulic Bolt Tensioners for Offshore Wind



The PGT-Series Bolt Tensioners provide high performance in tight spaces typically found in wind turbines. Key features include auto-retract pistons, over-stroke protection and auto-engage nut rundown.

The FTR-Series Foundation Bolt Tensioners are designed specifically for tensioning wind tower foundations bolts. The FTE-Series Elliptical Foundation Bolt Tensioners provide a fastening solution on wind tower foundation applications where limited space between the stud and wall prevent the use of standard tools. They feature an elliptical geometry, which enables fit in narrow access foundation applications without reducing load capabilities.

Legacy Manufacturing Company Introduces Flexzilla Pro Mini Impact Wrench



This wrench has a body length of 4.4", a weight of 2.5 lbs. and breakaway torque up to 800 ft.-lbs. It will allow professional mechanics to reach areas that full-size impact wrenches just don't fit and remove even the tightest, rusted nuts. The Flexzilla Pro Mini Impact Wrench is rated at 550 ft.-lb. of maximum reverse torque and 800 ft.-lb. of nut-busting torque.

It features an ergonomic grip with a patented forward/reverse toggle switch and torque selector that provides easy one-hand operation. A variable-speed trigger and three torque settings. The handle exhaust directs air away from the user and the built-in swivel allows the hose to rotate freely.

4. Unlike anti-seizure electroplating, Yudensha's technology prevents the film from flaking when used on bolts and nuts.
5. Unlike electroplating and resin coating, the film is extremely thin so it barely changes the end product's sizes.

This technology is best suited for bolts, nuts, stainless steel and iron components.

STAHLWILLE Rolls out the First Electromechanical Torque Screwdriver to the World



TORSIOTRONIC is the first electromechanical torque screwdriver on the market – combining the accuracy of electronic measurement with the convenience of the "click" from mechanical trigger mechanisms. The patented trigger system trips with audible and tactile signals when the target torque is reached. The tool measures as accurately as only an electronic torque tool can. Integrated ratcheting bit-holder with 80 teeth that provide a particularly small ratchet angle of only 4.5° and thus enable particularly sensitive working – ideal for hard-to-reach fasteners. The fine-tooth ratchet, a wide range of programming options and a micro-USB interface make the TORSIOTRONIC the ideal tool when it comes to logging work steps, applying very small torques or following complex tightening sequences. Available in four versions for different torque ranges: 12–120 cN·m, 30–300 cN·m, 60–600 cN·m and 100–1000 cN·m.

Böllhoff Introduces ECOSIT® Supply Systems with Increased Efficiency

With the new ECOSIT® supply systems, the focus is on the specific requirements and individual wishes of our customers.

Bundling services, lowering costs. With its ECOSIT® systems the company increases the efficiency of the entire value chain and guarantees the highest quality and transparency, successfully harnessing the latest RFID technology.

The ECOSIT® service package allows Böllhoff to take charge of the entire supply chain for customers: materials planning, procurement, quality management, stock-keeping and internal goods distribution right through to the production line.

Advantages

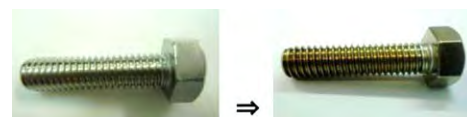
- Orderly and tidy storage
- Substantial time savings
- Reduced inventory and safety stocks
- 100% availability
- Online control of all ordering processes
- Modern RFID technology



Japanese Yudensha Rolls out New Functional Oxide Film Forming Technology

Features:

1. Bigger contact angle with excellent water repellence.
2. Forming fine and delicate oxide films that improve corrosion resistance.
3. Good slidability with little surface friction.



Japanese BCS Rolls out "NS-PIN 4" Anti-loosening Ring

BCS Co., Ltd. develops springs and supplies automotive clips. Now it is tapping into the fastener field. The automotive products take up 85% of the company's product line and are supplied to domestic mainstream carmakers. BSC has good sales performance and expects itself to transition to supplying electric vehicle products in the future. The president of BCS has expressed his will to enter other fields. His current target is to supply "NS-PIN 4", an anti-loosening ring for bolts and nuts used on railways and electric towers. The front end of the ring snatches the thread root to prevent the nut from loosening. Without using hand tools, the operator can assemble the ring to the nut with one push. Furthermore, the ring is reusable. It embeds itself in the outer diameter of the thread, so the nut can be re-fastened even with the ring attached.



Japanese Audec Offers Rust-proof Blackening Coating Applicable to Fasteners

The Audec "Ultra Black Super" blackening coating features the following:



1. Forming an Fe3O4 coat on steel and cast parts at boiling temperature.
2. Rarely producing irritant gas, significantly reducing impact on the human body.
3. Improving working environment.
4. The blackening coat gives the materials a glossy look and its thickness does not interfere with size precision of steel and cast parts. It resists abrasion and does not fall off from friction.
5. The coat contains rust inhibitor with excellent indoor rust resistance.
6. Applicable to mechanical elements like fasteners as well as components.

Japanese Yamanaka Provides PiezoBolt Embedded with Load Sensor

Yamanaka Eng Co., Ltd's patented PiezoBolt has an embedded sensor that detects the surrounding load during fastening. With mechanical joining technology, the company can embed the sensor without the use of adhesives. Users can connect the bolt with a specialized measuring software through wire connection to assess anomalies or problems. Without a highly polymerized compound blocking the load transmission, the load will directly reach the sensor to enable high-precision load measurement. Furthermore, the sensor has excellent durability and impact resistance and therefore is suitable for water, oil, powder and dust-filled environment.






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Material:
 Heat resistant steel, Hastelloy, Monel metal,
 Chrome-nickel, Stainless steel
 Production process: Forging, Turning & Grinding
 Surface Treatment: Plain, Black, Galvanized,
 Dacromet, Teflon...





Japanese Matsumoto Sangyo Provides S0.5-M4 Small Screws

Matsumoto Sangyo provides special screws for the medical industry. It specializes in S0.5-M4 micro-screws and miniature screws used in new territories like the aerospace machinery and medical industries. A few years ago it started to supply stainless steel special screws to an academic lab conducting brainwave research. The screws are used to assist the electrodes inserted into the brains of lab mice.



Fixtureworks Introduces New Ring-handle Detent Pins

Fixtureworks, a supplier of clamps, fixturing accessories, and machine tool, has introduced a new lineup of ring-handle detent pins in steel and stainless steel. Detent pins provide a secure, quick, and easy engagement for fastening, locating, and alignment applications that require frequent, repetitive use. The pins, with ring handle, work within commercial drill tolerances, and their spring-loaded ball retracts when inserted or removed. They come in diameter sizes of 3/16" to 1" with a pull-out strength from 4 lb to 40 lb. The grip lengths range from 1/2" to 6" depending on the diameter. The detent pins are available in either C1144 steel with steel split rings or 303 stainless steel with 316 stainless rings.



Releasable Mounting Clip Speeds up Changes to Cabling in Aircraft Seats

Changes to the configuration of first and business class aircraft cabin sections means time-consuming changes to the seat wiring. HellermannTyton has developed a special fastening element so that fitters can remove, attach and reconnect the in-flight entertainment system cabling in each seat more quickly.



The Seat-to-Seat Clip is made from lightweight and heat-stabilised PA66 thermoplastic. It is permanently anchored by the manufacturer to the seat frame and is available in two versions – for attachment with a screw or rivet or with a push-in arrowhead for hole mounting.

Technicians on Airbus A350 XWB aircraft can open and close the seat clip by hand without the need for tools. This makes the reconfiguration process simpler and faster.

Unlike other cable fastening parts, the Seat-to-Seat Clip is reusable. As a result, there are no remnants of cut cable ties (FOD) that can block the runners in the cabin floor.

HellermannTyton's competence developing plastic parts for application in aircraft stems from over 30 years of industry expertise. The company's fastening products meet the high standards requirements of the aviation industry.



SHANGHAI ATM PRECISION FASTENING TECHNOLOGY CO.,LTD.

SHANGHAI ATM is a specialized maker of fasteners and mechanical components made of special materials. Our main materials are stainless steel, duplex stainless steel, high temperature stainless steel, special stainless steel, high temperature alloy, anti-corrosion alloy, high strength alloy and high temperature alloy steel, totaling over 100 types. We have batch supplied products made of over a dozen of material types.

We produce fasteners and industrial components made of the following materials for the long term: SUS304, SUS310, SUS316, SUS317, SUS321, SUS347, SUS431, SUS440, SUS630, SUS631, N10276, N06625, N07750, N07718, N08926, NW2201, A453 660, 2205, 2507, 2520, 1.4529, 904L, HC276, 17-4PH, 17-7PH, GH2132, GH4033, GH4169, A2-80, A4-80, A4-90, A5-80, C1-70, C1-110, C3-80, C4-70, F51, F53, F55, P1-90, A193 B7, A193 B8.

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Swedish Sandvik Supplies Bolts That Secure the Lifetime of the Vasa Ship

After more than 4,000 rusty bolts have been replaced with specially constructed high-alloy stainless bolts from Sandvik, the job has now been completed. But every end is a new beginning – and now a whole new chapter for the Vasa ship is launched, with bolts that will last for at least 150 years.

When Vasa was salvaged in 1961, the 17th century bolts that originally held the ship together had completely rusted away. New bolts were inserted where the original bolts were previously seated, but eventually they also started to rust.

"Replacing the bolts from the 1960s was necessary for the ship to survive in the future. The attacking rust had weakened the bolts and caused chemical reactions in the ship's wood," says Vasa Museum's director Lisa Månsson.

Vasa Museum realized that all the ship's bolts had to be replaced with another, better material to prevent the hull from collapsing. The museum began to look for a material which could secure the lifetime of the ship for at least a further hundred years and for a partner to collaborate with. Sandvik was chosen and in 2011, Vasa Museum and Sandvik initiated a unique and long-term research and development cooperation to save the national treasure Vasa.

Together, a solution was developed with specially constructed, high alloy stainless bolts to replace the old 60s bolts. During the project, material specialists from Sandvik could help with everything from initial material discussions to measurements and evaluations, which showed that the new bolts were in line with expectations.

All the bolts have now been replaced and the warship Vasa can be saved for the future.



Martins Industries Designs Mobile Torque Wrench Support Stand

Martins Industries Inc. has developed a mobile impact wrench support stand that it said is designed to reduce fatigue normally associated with repeatedly lifting and torquing an impact wrench.

The new stand is compatible with most impact wrenches. The stand is designed to support weight up to 50 pounds and enhance precision by allowing users to move the wrench freely in all directions while installing lug nuts. When not in use, a locking system will secure the impact wrench onto the tray, which also can be used to set lug nuts, covers and indicators within arm's reach.



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