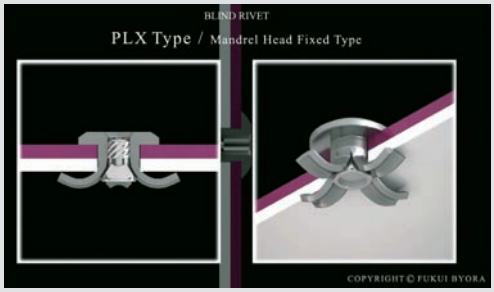
2018 Innovation Alley 新品大道

Japanese Sinwa Mekki Develops "Sinwa Zint" Zn-Ni Alloy Electroplating with 20 Folds of 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 "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.

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

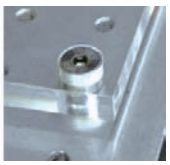
PLX blind rivet can tighten up soft materials like automotive interiors, building materials, and rubber. The sleeves of the blind rivet can split in 4 directions to fasten soft materials. A single size of PLX blind rivet can cope with multiple widths of soft materials, reducing parts count and improving 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.



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.





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 the intruder 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 have also developed self-drillers equipped with our 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 Kobori Rolls out the Anti-loosening Petal Fastener

This February, Kobori Co., Ltd started sales of a new spring product that can prevent bolt from loosening. The spring is rectagular before fastening and is hexagonal after fastening. The name “Petal Fastener” is derived from its shape. With this spring, users can quickly tell whether the construction has been done and reduce management cost. It passes 30,000 cycles of vibration without bolt loosening.

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 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.

Japanese NTT Comware and HPE Roll out AI Parts (Including Screws) Inspection Device

On November 1, 2017, the two companies started selling "Deeptector" Edge AI (Artificial Intelligence) Package for factories in need of replacing visual check with automation. This package has NTT Comware's "Deeptector" image recognition technology pre-installed to HPE's "Edgeline EL1000" PC server used for IoT.

Users will have to prepare images or surveillance clips of their products, and use the "recognition model creating tool" to classify them by inputting words and ratings (defective or not) before the package starts deep learning, and then use the completed model to identify defective and non-defective parts. The package uses 2 sets of NVIDIA Tesla P4 graphics processing unit for deep learning and logical computing. Each set can process 5 images in a second.

NTT Comware rolled out the cloud version of "Deeptector" last June that could transmit the models created by the cloud to appliances.

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 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.

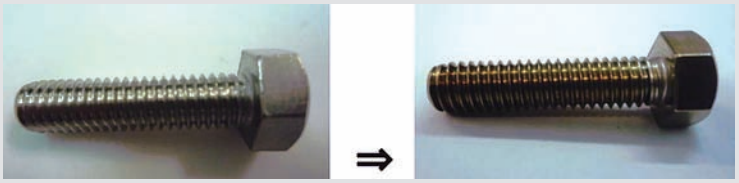
Customized C-Washers Available from Boker's

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.

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.
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 etremely thin so it barely changes the end product's sizes.

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

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 guarantee the highest quality and transparency, successfully harnessing the latest RFID technology.

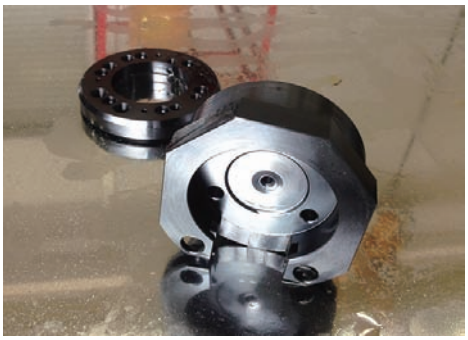
The ECOSIT® service package allows Böllhoff to take charge of the entire supply chain for customers: materials planning, procurement, quality management, stock-keeping and internal goods distribution right through to the production line.

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 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 aniti-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.

Advantages

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



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 boil temperature.
2. Rarely producing irritant gas, significantly reducing impact on human bodies.
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 come 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.

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.

HellermannTyton Debuts Two Extreme-Duty Solar Module Cable Fasteners

HellermannTyton, a specialist in the design and manufacture of robust solar fasteners, announces a high-performance Button Mount with Cable Tie and Locking Clamp. The two products fit the predrilled holes of most solar modules. They are rated for extended life in demanding outdoor environments and available for immediate shipping.

The Button Mount with Cable Tie fits most module holes and requires zero insertion force. Once placed through the module's frame, installers can insert the included Solar Tie through the mount on the frame's opposite surface.

The Locking Clamp fully closes and locks over a cable bundle. This fastener features an integrated fir tree mount for easy installation and includes a saddle for adding an optional Solar Tie and extending its bundle capacity. Designed with single-axis trackers in mind, it demonstrates exceptional extraction resistance.

"Many installers run standard cable ties directly through sharp module holes, probably because it's fast and easy; but unfortunately, those ties will fail prematurely," said Product Marketing Manager – Energies Nick Korth. "So, we made these mounts easy to install but tough enough to withstand sun, wind and movement within module holes for years."

Both products fit holes from 9x12 mm to 9x14 mm and can manage several cables. They are manufactured of high impact modified, heat-resistant, UV stabilized material, which is ideal for long-term performance in the full range of weather and climate extremes.

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.

Alumseal® 611: New Zincate for Aluminum Alloys Designed to Extend the Electroless Nickel Process Bath Life

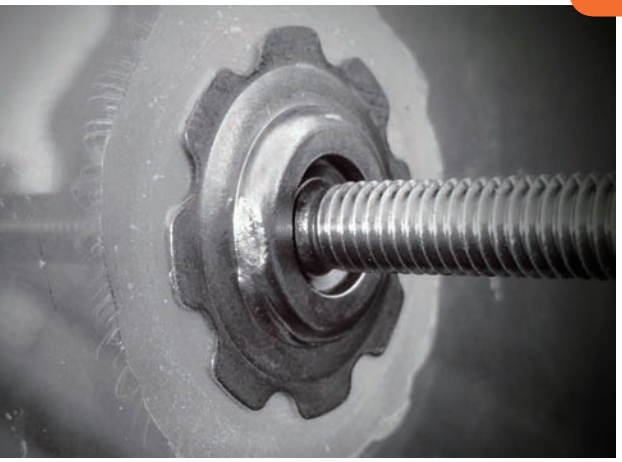
Aluminum is a very reactive metal and has a tendency to form an oxide layer very rapidly when in contact with oxygen. The presence of the oxide layer is not desirable in cases where the surface has to be metallized. The adhesion of subsequent coatings applied on the aluminum surface is adversely affected by the oxide layer. To avoid the rapid oxidation of aluminum during the pretreatment steps and prior to electroless nickel or electroplating, it is a common practice to cover the surface with a thin uniform film of zinc by use of a zincate process. In the case of electroless nickel (EN) plating, the build-up of zinc contamination limits the bath life to 3 – 4 MTO.

A new zincate process, Alumseal® 611, has been developed by Atotech to provide very thin zinc coatings in order to reduce the amount of Zn contamination in the EN bath, thus eliminating the need for an EN strike bath. Alumseal® 611 is designed to extend the bath life of the EN process to >6 MTO. Alumseal® 611 has demonstrated that coating weight of the zinc film is reduced by 30 – 60% on aluminum alloys when compared to existing zincate processes.

“When using the new Alumseal® 611 zincate process in combination with the high Zn tolerant electroless nickel process Nichem® MP 1188, the bath life can be extended up to 8 MTO without an EN strike bath”, states Shakeel Akhtar, Global Product Manager for Wear resistant coatings (EN) at Atotech. “Atotech is the first company to achieve this milestone within the plating industry.”

Due to low Zn build-up and high tolerance to Zn contamination, the efficiency of the EN bath is improved through higher average plating speed. The combination of Alumseal® 611 & Nichem® MP 1188 provides technical and economic benefits for the customer in a highly demanding industry.

Spida Studs Offer Increased Options for Boatbuilders



Spida Stud offers increased strength and improved adhesion properties to ensure a truly reliable lightweight bonded fastener.

New to the market, the Spida Stud offers a number of advantages over traditional bonded fasteners. First, the fastener itself is circumferentially welded to the back of the base, which reduces the risk of the fixing failing at the weld. This means that potential stresses are efficiently passed down the thread and dissipated out into the base of the fixing, greatly increasing the durability and ensuring the maximum possible breaking strength.

The base of the Spida Stud features eight self-levelling mini feet, which ensure an optimal 0.5mm bond line of adhesive is formed under the fixing. This consistent layer of adhesive underneath the fastener aids bonding. The feet also make for a castellated edge that improves torque resistance by 24%, enhancing the performance of the part. These features are paired with a proprietary surface treatment called AdMaxTM which increases the contact area for adhesive.

End users can specify marine 316L stainless steel, manganese and boron steel alloy, with further material options to be made available in the near future such as glass filled nylon and carbon fibre PEI lightweight engineering plastic.

Würth Releases New Plastic Universal Dowel SHARK Pro®

The Würth has recently released a new plastic dowel called SHARK Pro(@). It has many features that will definitely draw the attention of relevant application industries, which are listed as below:

1. Ensures knotting in all cavities and struts in all solid building materials
   - Twist or retention device prevents turning in the borehole
   - Patented dowel head knots the dowel shaft when screwing in
2. Easy and quick installation
3. Low insertion torque and high tightening torque
4. Suitable for plug-in and push-through installation
   - Reversible anchor collar
   - Impact lock prevents premature spreading during push-through installation
5. Resistant to rotting, weathering and aging
6. Made of high quality polyamide (nylon)
7. Halogen-free and silicone-free
8. Temperature-neutral from -40 ° C to + 100 ° C

Bülte Releases New Washer Faced Hex Screws with Torx

Manufactured in natural nylon, this new range combines 3 shapes in one: hex head, star drive and washer. When compared with metallic screws, natural nylon is light, non-conductive to electricity and has very good thermal properties. And the materials mechanical strength provides good resistance to shocks and will also resist staining.

This triple fastener combination offers several advantages:

- A variety of drive tools : Spanner / Socket / Torx driver
- The combined washer that :
  - o Limits the pressure / tension under the screw head
  - o Offers better support and protects the fastened surface
  - o Better distribution of the load
- The star drive that:
  - o improves tightening torque
  - o is less likely to slip during tightening

Dimensions available: M4, M5, M6, lengths 6 to 60 mm depending on the diameter.

Besides Nylon, BÜLTE also proposes this range in PP, PE, PVDF, and PC on request. These materials are also stainless, and they offer higher resistance to diluted acids, greases, oils, alcohol or petrol.

Another option is fibre glass filled Nylon which combines enhanced mechanical performance and long term durability. It represents the perfect polyamide for pieces that require higher Torque, and increased shock absorption.

The washer faced hex screw with Torx can be adapted to all your applications and can be produced in a large range of colours (see RAL chart, minimum quantity on request).