

Innovation Alley

compiled by Fastener World

1. M8 Undercut Anchor

With patents in Taiwan, China, Japan and Germany, Laiterli Group (Laiterli International Engineering) in Taiwan has developed an M8 undercut anchor which is able to fasten tightly with masonry and does not require tapping the anchors during operation. It is reusable, easy for operation and inexpensive.

According to National Center for Research on Earthquake Engineering (Taiwan), the M8 undercut anchor did not distort or loosen during the quake test and there was no cracking and damage on the masonry. The anchor successfully withstood up to 1,600kgf in an SGS-approved torsion test and is compliant with B/T32839-2016 standard.

2. No Break Screw

"No Break" Screw by Kitamura Seiko Corporation contains at its front end a blade portion to cut the wood and prevent wood from cracking, as well as a threaded portion to increase the screw's thrust. These designs help achieve the following 3 advantages:

1. No wood cracking when the screw is driven into the ends of the wood.
2. The screw will continue to drive in even if it hits a knot in the wood.
3. No need to follow the growth rings when driving the screw.

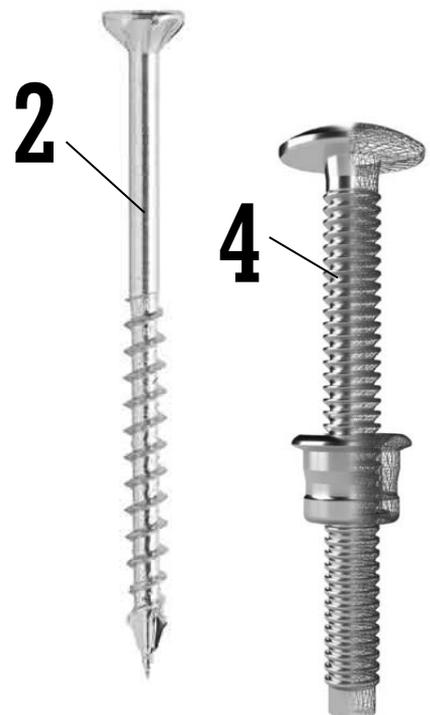
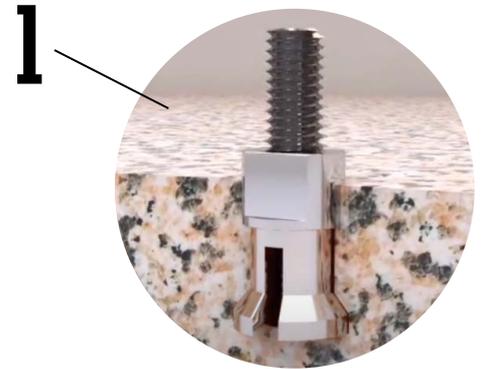
3. Security Fastener to Prevent Businesses Becoming Victims of Crime

A new range of security fasteners has been launched to help businesses to cut the cost of being a victim of crime from their overheads. The innovative 5-Lobe pin from TR Fastenings is the first complete range of security fasteners made from corrosion-resistant A4-70 stainless steel - the perfect product for outdoor use, in particular in marine, health and medical sectors because of its non-reactive qualities. The fastener's five-sectioned screw head means that it can only be undone by someone with specialist tools, preventing its removal by an opportunist criminal. Fastenings made with corrosion-resistant A4-70 stainless steel do not degrade if they come into contact with salt water and other chemicals that have an impact on other forms of steel. The durability of the high grade material means that components need to be replaced less often.

The 5-Lobe pin is rated as a level 2 enhanced security product and can be supplied with button or countersunk heads in either machine screws or self tapping screws. A4-70 stainless steel is a high tensile strength stainless steel with excellent corrosion resistance making it perfect for both internal and external applications. It is used in the manufacture of medical surgical instruments and in the pharmaceutical industry where cleanliness is absolutely key - the addition of molybdenum to its composition provides the A4 grade with a greater level of corrosion resistance. Its composition means it is also perfect for use in marine environments.

4. The New M-Grip™ T304 Stainless Steel Lockbolt System

In continued efforts to improve the industry standard, Goebel Fasteners has developed a patented new multi-grip lockbolt system made completely from T304 Stainless Steel. In applications where a wide grip range is needed and a consistent flush pin break to the collar is favorable, the Goebel M-Grip™ is the new and improved standard in the market. Essentially the M-Grip's wide grip range and various sizes can replace up to 14 sizes of the classic 6-groove locking fastener system. Similar to all Goebel engineered fasteners, the M-Grip™ provides a top level of quality and vibration resistance. The M-Grip™ installs consistently with reliable and identical installed values.



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5. New Bolt Mark Identifying Fastener Loosening and Tampering

Permatex®, a leading innovator in chemical technology for automotive maintenance and repair, has introduced a new product designed to help professional technicians and DIYers alike easily identify loosening and tampering of nuts, bolts, fasteners, and assemblies. Permatex Bolt Mark is a tamper-proof indicator paste that provides the user with a visual marker of completed work and easily identifies if a fastener has become loose or damaged.

Designed to deliver a tamper-proof torque seal, Permatex Bolt Mark provides warranty protection for the user against tampering. It can also help save time when completing a job, by providing a visual indication of which assemblies have been torqued and which still need to be tightened. The quick visual evidence by Bolt Mark also helps speed up safety checks in professional and amateur racing applications.

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6. QV-7108 3D Inspection Machine

The latest model "QV-7108 3D" developed by Japanese K&K Engineering Corporation is the first inspection machine in the Japanese fastener industry that comes with a 3D photographing function. The illuminating device installed to the camera on top of the existing model "QV-7108" casts on and off a net-shaped light on workpieces and analyzes the reflected light in real time to generate 3D graphics. The different heights on a workpiece are color-coded. The workpiece's 3D shape is analyzed to check its burrs and thickness deviation. "QV-7108 3D" can check (pre-oiled) nuts up to M24 in nominal diameter. For M24 nuts, it can check 100 pieces per minute. It has two index tables with an inverting device in between to flip over the nuts.

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SASAKI
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7. "S-Clean" Liquid for Surface Treatment

Nickel based alloy is a highly corrosion-resistant material that is hard to process and surface-treated. Japanese Sasaki Chemical succeeded in developing "S-Clean RE-100" which is an etching liquid specifically used on nickel based alloys such as Inconel and Hastelloy. The liquid can remove burrs on parts (including fasteners) made of nickel based alloy and perform etching on them.

"S-Clean RE-100" is the only etching liquid within the industry it belongs to that is free of toxic hydrofluoric acid. It can reduce processing time and the troubles in waste water discharge.



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8. Spray-type Rust Remover Applicable to Threads

Japanese Engineer Inc. has added ZC-28 Spray Type Rust Remover, suitable for wide spraying, to the "NejiSaurus" kit series.

Features:

1. Instantaneous reaction to rust. Rust removal of small parts completed within 3 seconds.
2. Neutral liquid for safety.
3. The liquid can seep into the tiny gap between the bearing surface and threads when sprayed at screws installed on components.
4. Applicable to automobiles, agricultural machines, pipes and so on.

9. Low-cost Bolt Loosening Inspection Technology

Shibaura Institute of Technology teamed with PhD researchers from University of Edinburgh and successfully developed a way to evaluate bolt loosening at low cost. They utilized ultrasonic vibrations inaudible to human ears to measure the frequency and axial force at the tip of a bolt through which they can inspect bolt loosening. This process doesn't rely on inspectors' skillfulness and is therefore simple, convenient and low-cost. This technology can be introduced into machines for inspecting thread loosening. □

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