Innovation Alley

compiled by Fastener World

WMS Large Wheel Nut Fastening Management System by Japanese Tohnichi

Tohnichi begins sales of WMS Large Wheel Nut Fastening Management System which can be used to re-tighten large wheel nuts on cars running 50-100 kilometers. The user can set the limits of the number of axles, tires, nuts, and torque values. Correct data management of large wheel nut fastening can be done by one person. The fastening data is transmitted via WIFI and is color coded for the user to confirm the fastening result by sight. The user can search fastening records or export them in CSV format.

Japanese TODA Co-develops Eye Washer with Katecs

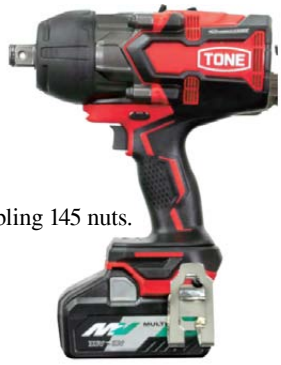
"Eye Washer" co-developed by TODA and Katecs is a color-forming special lock washer used with bolts, through which the user can determine the axial force on the lock bolt by sight. TODA and Katecs stick two pressure-measuring films to the back of plastic washers. As the pressure starts to act on the washer, the color former will come out and color the washer red. The operator can visual check the diameter of the red zone to determine the axial force acting on the bolt head. This is cheaper than using an axial force gauge and the setup is easy.

Japanese TONE Rolls out 1100N.m-output Torque Wrench

TONE's CIW61100 Wireless Torque Wrench couples with patented sockets which, by design, has an additional groove in addition to the existing one. While replacing a socket, the user can move the O-ring on the existing groove to the new one to speed up detaching the socket and improve operability.

The main features of CIW61100 are:

1. 1100N.m output. 4 output modes.
2. Lightweight: 4kg, 221mm.
3. High capacity battery allowing for assembling 145 nuts.
4. IP56 water/dust resistance.



New Quarter-Turn Fastener from Southco Designed for Use in Tight Spaces

Southco Asia Ltd., a subsidiary of Southco Inc., a leading global provider of engineered access solutions such as locks, latches, captive fasteners, electronic access solutions and hinges/ positioning technology, has introduced a new product to its industry-recognized line of DZUS® Quarter-Turn Fasteners that enables end users to easily fasten and unfasten with a quick, quarter-turn motion in limited-space applications. Southco's DZUS® D9-52 Tech Line Quarter-Turn Fastener features a reduced head diameter, allowing it to be installed in tight spaces and easily accessed via hand or tool actuation.

Southco's DZUS® D9-52 Tech Line Quarter-Turn Fastener features a captive, spring-loaded design that provides accurate, secure engagement and vibration resistance, while helping to prevent damage caused by over tightening. Available in press in and flare in installation styles, the DZUS® D9 Tech Line is available in a variety of stud lengths and mating receptacle options to accommodate varying panel thicknesses. The DZUS® D9-52 Tech Line Quarter-Turn Fastener is available with corrosion-resistant steel or UV-resistant prism color over molded heads which allow users to easily differentiate application zones.

Atotech Introduces New Passivate Tridur® ZnNi H5.2

Atotech recently introduced Tridur® ZnNi H5.2 to the electroplating market; a black passivate, which is applicable to alkaline and to acidic zinc-nickel surfaces. Tridur® ZnNi H5.2-plated parts can be easily combined with aluminum alloys and used in the automotive industry to minimize contact corrosion. Like all of Atotech's other passivates, this new passivate exceeds the requirements of DIN EN ISO 19598. The application of the smart additive system Tridur® ZnNi H5.2 results in an extended lifetime compared to the market standard. This directly translates to reduced costs for customers, constituting a clear competitive advantage in the market.

Sabine Sengl, Corrosion Protection expert at Atotech said, "We are particularly proud that our automotive industry-approved Tridur® ZnNi H5.2 complies with the REACH regulations for beyond the year 2021, because it is both cobalt-free and fluoride-free." Deep black, aesthetically appealing fasteners and other parts are mostly deployed within the automotive industry. Tridur® ZnNi H5.2 forms a long lasting, homogeneously spread, deep black color to surfaces at 12-13% incorporation rates of nickel (well with OEM standards), ensuring a very high corrosion protection against red rust.

Combined with Atotech's sealers, the post dip Tridur® Finish 300 or Atotech's zinc flake top coats, Tridur® ZnNi H5.2 offers remarkably high levels of corrosion protection against white and red corrosion (240 / 720 h) according to DIN EN ISO 9227.

Japanese THREE PEAKS Truss Head Screw Vise

THREE PEAKS GIKEN's "DS-165T Vise" consists of a grip jaw, an adjustable screw and an unlocking lever. In application, use the adjustable screw to adjust the opening range of the jaw and apply the vise on a stripped screw. The vise will lock on the screw and make it easy to loosen the screw. Push the lever upwards and the vise is unlocked. The vise uses a cap screw as the adjustable screw. When the stripped screw is gripped by the vise, you can insert an Allen wrench in the adjustable screw and screw it in further to generate a grip larger than a hand grip. The jaw has a tapered tip that can reach in limited space. In addition to ordinary screws, the vise can be used on truss screws, and it is expected for use in the construction market and automotive aftermarket.

Japanese Okaya Heat Treatment Industry's Die Flatness Tester

Okaya Heat Treatment Industry developed a non-contact automatic die flatness tester that makes for saving much labor which dial gages and 3D testers largely depend on. Put a heat-treated die on the 800-square-millimeter square plate, set the die's height and its vertical and horizontal sizes through the monitor, and the tester is good to go. Next, the laser from the movable head will automatically measure the die while moving in a 1-cm incremental distance. The laser portion of the tester includes a sensor preventing the operator from entering wrong settings, as well as two 1/4 wavelength semiconductor laser devices that offset the tool mark. The sensor comes in two grade types: high-precision 15 nanometers and super-high-precision 3 nanometers. The computer in conjunction with this tester can display vertical and horizontal deviation values and flatness values, as well as full color status display of high/low deviation.

The New Wiha speedE® II Electric - Speed Has Never been So Safe

Wiha, the hand tool manufacturer, is now launching its new speedE® II electric e-screwdriver. Faster, stronger and more versatile in design, the new generation of the electric screwdriver now promises even more application advantages. The Wiha speedE® II has two material protection levels of 0.4 Nm and 1 Nm, which open up a new range of applications. With its voltage-proof slimBit interchangeable system (up to 1,000 V AC), this 'Made in Germany' innovation offers users maximum safety, flexibility and freedom of choice in everyday professional life.

Its globally unique functionality is characterised by its intuitive and easy handling: First the screws are automatically tightened three times faster than with a conventional screwdriver, and then the material protection stop is activated. Particularly with sensitive screw connections and when care is needed when fastening, very high power transmissions quickly cause material damage. For this reason, the power level 0.4 Nm should be selected in such cases. With the sliding position at the 1.0 Nm level, speedE® II can also be used in combination with the yellow Power slimBits as tools for tasks requiring more strength, for example for fastening larger threaded screws. The screw can then be carefully tightened fully by hand in both material protection stages.

The ring switch allows convenient operation in all working positions. A ring LED light provides maximum illumination of the working area, which makes work even easier for users and prevents shadows being thrown on the work piece. The red and yellow slimBits are all individually tested at 10,000 V AC, are approved up to 1,000 V AC and with their colour coding are helpful for selecting the correct power stage. Small screw profiles

are generally used for sensitive, delicate screw connections. The matching slimBits with their red colour tell users that they should set the material protection level to the red, 0.4 Nm level for this application. For stronger screw connections with larger profiles, the yellow colour of the respective slimBits shows that the slider can also be used to switch to yellow and therefore to a powerful 1.0 Nm.

Using the ergonomically designed speedE® II greatly reduces stress and muscle strain for professionals who often have screwdrivers in continuous use, making the strenuous manual screwing process is a thing of the past. Muscles and tendons in hands, arms and the entire musculoskeletal system are subjected to less strain, which means a noticeable health benefit for users in many professions who use conventional fastening tools in their daily work. It is therefore also recommended by German doctors and physiotherapists at the AGR (Campaign for Healthier Backs).

In terms of size and weight, the speedE® II is comparable with conventional screwdrivers, which makes it the ideal companion for mobile applications. The 'Made in Germany' label underlines that the highest standards regarding robustness and quality apply. The speedE® II Set includes the e-screwdriver itself, one red and one yellow slimBit, two standard 18500 rechargeable batteries, a USB charger and an L-Boxx Mini. Additional accessories, such as the easyTorque torque adapter, slimBit boxes, bags and a suitable power supply unit for the USB charger are available separately.

The Wiha speedE® II electric is the latest member of the now 96-part Wiha ElectricVario family, which combines all fastening tools, slimBits, ¼" hexagon head nut driver, adapters and more and optimally covers all fastening tool tasks with multiple combination options.

3D Tech Helps Keep Thieves at Bay

As car security systems become increasingly more sophisticated, thieves are targeting car parts instead, including alloy wheels. One method to deter wheel thieves is to use locking nuts, one on each wheel, which require a special adapter, or key, to loosen. But even these are not invulnerable. "Our engineers have now developed unique locking wheel nuts using 3D printing technology. Together with EOS, a leading supplier for high-end solutions in additive manufacturing, we have created locking nuts with contours based on the driver's voice."

Like an iris scan or a fingerprint, a person's voice can be used as a unique biometric identification. Engineers record the driver's voice for a minimum of one second, saying something like "I drive a Ford Mustang", and use software to convert that singular soundwave into a physical, printable pattern. This pattern is then turned into a circle and used as the design for the locking nut's indentation and key.

With the geometry in place, the nut and key are designed as one piece, then 3D-printed using acid and corrosion resistant stainless steel. When finished, the nut and key are separated, with a small amount of grinding required to make them ready for use. The design also includes second level security features that prevent the nut from being cloned or copied. The unevenly spaced ribs inside the nut and indentations that widen the deeper they go prevent a thief from making a wax imprint of the pattern, as the wax breaks when it is pulled from the nut.

If not using the driver's voice to create the contours, the nuts could feature designs specific to a vehicle, such as with the Mustang logo, or use the driver's initials. The design could also take inspiration from a driver's interest, for example, by using the outline of a famous racetrack.

High-performance BR12PP-8 Smart Rivet Tool from STANLEY® Assembly Technologies

The high-performance BR12PP-8 Smart Rivet Tool from STANLEY® Assembly Technologies, the global leader in precision fastening, allows manufacturers to reduce scrap, optimize the assembly area, and provide real-time process data to the existing plant manufacturing execution system by recording the stem break load and rivet pull distance.

"The product launch of the BR12PP-8, STANLEY Assembly Technologies is the latest development in partnership with the STANLEY® Engineered Fastening to offer the best in smart, cordless, programmable rivet setting technology," said Deanna Postlethwaite, director of global product management at STANLEY Assembly Technologies.

The BR12PP-8 Smart Rivet Tool offers benefits including:

- Digitally adjustable force and distance acceptance values
- Use 1 tool for many rivets and applications for reduced cost of ownership and increased error detection
- Detects errors in the process, preventing customer returns and recalls
- Optional integrated force switch
- Programmable multi-function button provides a simple, flexible way to complete many different tasks with a single button
- Durable brushless DC servo motor engineered for the high production environment