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Innovation Alley



Boron Weld Nuts Advance Effective Use of Ultrahigh Strength Steels

Ramco has developed an innovative line of weld nuts designed to assist stamping companies and OEMs with thin, ultrahigh strength steel applications. Initially developed for boron steels, the new nut has enhanced weld projection geometry designed for extra stability during high-current welding. Many stampers have issues with adhesion of their standard weld nuts to ultrahigh strength steel. Ramco's RamTek design addresses these assembly issues allowing its customers to reduce weight in their applications.

Manufacturers and stampers who seek to create lighter weight components and increase tensile strength should know Ramco has weld nuts for ultrahigh strength metals. These new nuts are perfect for floor pans, inner door brackets, pillars, cross members, or any structural stamping applications.

New microPEM® ClampDisk™ Fastener Offers Innovative Alternative to Traditional Automotive & Consumer Electronics Assemblies

Global industry leader PennEngineering has announced the launch of the new microPEM® ClampDisk™ Press-on Fastener. Designed as a unique alternative in assemblies for the automotive electronics and consumer electronics markets, the ClampDisk™ micro fastener delivers a fast, simple way to achieve sheet-to-sheet clamped attachment while replacing the use of standard screws, nuts, and adhesives.

This innovative technology reduces the risk of installation issues that are often experienced during the assembly process when traditional fasteners are used. The most common challenges that can be eliminated or reduced by using ClampDisk™ include over installation, cross-threading, stripped screw heads, broken screws, and damaged products.



Böllhoff Releases HELICOIL® Smart- The New Generation of Thread Technology for High-strength Joints

The new HELICOIL® Smart is a further quantum leap in the HELICOIL® thread technology. A coil thread insert with tang which does not have to be broken off.

The innovation: The installation mandrel bends it backward during spinning off and then compresses it. This smart thread insert merges the advantages of the HELICOIL® Plus and the HELICOIL® Tangfree.

The HELICOIL® Smart thread insert, which is made from a wire with rhombic profile, is also formed into an elastic spiral. As to the Free Running version, thread by thread it is a completely free running coarse thread. The result is a true to gauge internal thread including the last thread which is in every case threadable. It produces high strength threads transferring forces from flank to flank into the holding thread. To screw in the thread insert, all you need is the Smart installation mandrel of similar size as a tap. Very special is the blade position control. Upon screwing in, the blade has a pull in function, whereas upon screwing out, it turns into a bending and compression tool.

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Erwin Halder KG Introduces Clamp Lock Pins

The clamp lock pins are ideally suited for connections which have to be released regularly. Their key advantage: Unlike other solutions, these pins can be fitted into short blind holes: Fastening the connection requires that the pin be inserted into the blind hole. A press of the button on the handle releases the balls, allowing the user to easily slip the pin into the bore hole. When the button is released, a taper on the interior pushes the balls outward again. The friction generated between the balls and the component clamps the clamp lock pin into place, securing the connection. Another push of the press button is all it takes to release the pin again. This will release the locked balls again, allowing the clamp lock pin to be removed effortlessly. This mechanism allows the quick connection and release of two parts without the need for any additional tools.



The clamp lock pins are available with mushroom-type knobs measuring 6 mm, 8 mm, 10 mm, 12 mm and 16 mm in diameter and with lengths ranging from 10 to 120 mm - depending on the version. The user can choose between two material options: a version made from stainless steel (1.4305) or a version constructed from precipitation hardened stainless steel (1.4542).



LIGNOLOC® of the BECK Fastener Group Wins the German Design Award 2020

The collated wooden nail now also convinced the jury of the German Design Council. The German Design Council announced the winners of the German Design Award on November 22, 2019. LIGNOLOC® – the first collated wood nail – was selected as "Winner" in the category "Excellent Product Design – Workshop and Tools".

Stefan Siemers, Director Research & Development at BECK, is delighted with the recent recognition: "It is overwhelming to see how a product that usually plays the leading role unnoticed, becomes the focus of attention and is honored with such a high-ranking prize." Especially the sustainable approach of the innovative wooden nail was convincing. The statement of the jury: LIGNOLOC® is the first magazine-loaded nail made of wood. It is shot into the wood material without pre-drilling by a pneumatic nailer and thus replaces traditional steel nails. A real innovation that is environmentally friendly, sustainable and allows for an even more purist use of wood – without any metal, glue or similar. The official award ceremony took place on February 7, 2020 in Frankfurt am Main.

Japanese NejiLaw Developing Smart Screws and "God's Eye" AI System

NejiLaw is working with Casio on developing IoT-enabled smart screws named "Smart Neji". NejiLaw is going to embed multiple sensors in its anti-loosening screws and combine them with impact resistance and low power consumption technologies that Casio created with G-SHOCK watches. The smart screws will be able to check fastening states, wirelessly collect data of stress at the fastening portions, extract vital signs at the connecting portions, analyze the data and get updated on the stress state of the whole structure. Settings can be done in the fastening process without wiring. Users can easily view the structure's variations with time via visualized presentation.



In recent years Japan has faced problems of deteriorating buildings and frequent occurrence of earthquakes. These problems cannot be neglected or otherwise there could be a loss of JPY 1,410 trillion in the occurrence of South Sea earthquakes and JPY 778 trillion if an earthquake takes place in Tokyo. To enhance the country's infrastructure, NejiLaw will utilize the smart screws to develop an AI system named "God Eyes" that can visualize structural health of the following facilities: factories, power plants, power supply lines, water lines, gas lines, railways and roads, cars, large vehicles, ships, airplanes, rockets, robots, industry machines, construction equipment, buildings, and houses. ■