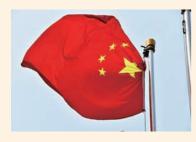
# Fastener World News

compiled by Fastener World

#### **Industry Update**



### Weight Reduction Could be the Focus of China Fastener Technology

In the 21st century, China's vibrant construction demand will significantly drive the growth of the fastener industry. Through decades of development, Chinese fastener industry has apparently leveled up its technology which is implemented in a few actual applications. First,

in recent years Chinese fastener companies increased the development and application of raw materials and have made progress in heat treating raw materials, leading to the successful development of 10.9 grade high strength fasteners applied in automobiles, diesel engines and compressors. Second, China's development in material selection, hot heading, heat treatment and surface treatment for M30-M65 10.9 grade high strength fasteners has panned out in response to the demand for localized wind power facilities. Additionally, China has reached a certain result in the development of heat-resistant materials, hot heading and heat treatment.

While making breakthroughs in manufacturing technique, China is advancing in fastener development with rapidly increasing fastener patents. During 2008 and 2017, the number of patent application for Chinese fasteners kept increasing. Particularly 2012 marked the largest growth margin of 40.5% for the number of fastener patent application. In 2017 the number was 13,171.

With the development of the automobile, machinery, construction and light manufacturing industries, the global market has increasingly high requirement for fasteners, such as higher performance and lightweighting for cars, taller buildings and longer bridges, and requires fasteners to have better stress performance and be lightweight. The strength of bolts used on American cars are on an average grade of 9.2 and above, and some fasteners used on cars or machines are even required to have a tensile strength above 1,400 MPa.

The fastener technology gap between China and global advanced countries is more obvious in the supply of raw materials, and therefore, the future technological development of China will center on the development of raw materials. For example, in China the materials for fasteners are basically hot-rolled, so the future development of steels for fastener manufacture in China will center on adopting in-production softening treatment and developing high purity steel, untampered steel, micro-alloyed steel, ultrafine grained steel, dual phase steel, and low carbon martensitic steel. Additionally, for now China's high-end fasteners can only partially satisfy the market, and some specially required fasteners have to be imported. For example, 90% of electronic screws in China are imported. Therefore, the focus of R&D will be developing high-end fasteners.



#### A Taiwan-funded Fastener Plant in Zhejiang Province of China Penalized for Illegal Discharge of Waste

A People's Court in China made a first-instance ruling on September 28, 2018 on a case where a Taiwan-funded fastener company was suspected of cross-provinial discharge of hazardous waste contaminating Yangtze River. The Court ruled that the company would be fined RMB 10 million for the environmental contamination. The owner of the company and two critically involved defendants were penalized with 5 years and 9 months up to 6 years of imprisonment and a fine of RMB 200,000. The other defendants were sentenced to imprisonment or criminal detention along with fines. Along with the civil compensation, the total fine reached RMB 6.65 million, and the company was required to issue a public apology on the media.

In recent years China has gradually gained awareness on environment protection and has been toughening pertaining regulations. Many companies were forced to shutdown for not complying with the regulations. It is strongly suggested that companies planning to set up bases in China should comply with local regulations in case of unfathomable losses and penalties that serve good to no one.

#### Fastener Production & Sales in Wenzhou City (China) Increased in 2018



The fastener industry in Longwan District of Wenzhou City remained its growth trend in 2018. Currently the city has reached a total production value of over RMB 7.5 billion, up 5%. The total export volume of the city has reached 5,954 tons, up 28.71%.

Integrating with the Internet, the fastener industry in Longwan District kicked off a boom of independent research and development. "For instance, the threading machine produced by ZhongTe company in Wenzhou City contains 5 patents," said Secretary Chief of Wenzhou Fastener Association. The association actively helps companies improve their core technology, brand awareness and reputation.

The fastener industry in Longwan District operates with two strategies, one is to target technical reform, and the other is to target collaboration between the industry and universities, taking the industry to the next level. ZhongTe collaborated with universities and refined the old structure of threading machines through innovative approaches, creating a a new threading machine with a smaller size but larger threading force and higher precision.



### Production & Sales of New Energy Vehicles in China Increase by Over 60% in Jan-Nov 2018

According to the latest statistics of China Association of Automobile Manufacturers (CAAM), the production and sales of new energy vehicles in China in Jan-Nov 2018 reached 1.0532 million units and 1.0298 million units respectively (up 63.63% and 68% compared to 2017), showing a steady growth in the production and sales of new energy vehicles.

Despite the 70% growth in new energy vehicles, the growth in China's automotive market is slowing down. In the first 11 months of 2018, China's automotive production and sales were 25.3252 million units and 25.4197 million units respectively (down 2.59% and 1.65% compared to the same period last year). Production and sales of passenger cars reached 21.4741 million units and 21.4784 million units (down 3.37% and 2.77% compared to the same period in 2017); production and sales of commercial cars reached 3.851 million units and 3.9413 million units, up 1.97% and 5% compared to the same period in 2017.

From Jan. to Nov. 2018 the production and sales of electric vehicles reached 0.8066 million units and 0.7909 million units respectively, up 50.30% and 55.66% compared to the same period in 2017; production and sales of plug-in hybrid powered cars reached 0.2466 million units and 0.2386 million units, up 130.27% and 127.58% compared to the same period in 2017.

#### China's Steel and Copper Standard Fastener Export in First 10 Months of 2018 Increases in Volume and Value

According to the latest fastener import & export data of China's Customs, in the first 10 months of 2018 China exported 2.7 million tons of steel and copper standard fasteners (total value: approx. US\$5.4 billion) to the world, up 14.5% and 31.7% respectively in volume and value, compared to the same period of 2017.

### Taiwan's Small Screw Export Volume in Q1-3 2018 Reaches New High

Taiwan's self-tapping screw export volume in Q1-3 2018 was over 160,000 tons, up 10.87% from the same period in 2017; the export volume of wood screws was



also up 11.78% from the same period in 2017. The average export price per KG was: US\$2.643 for self-tapping screws and US\$2.562 for wood screws (both up more than 8% from the same period in 2017). The export volume of self-tapping screws has been on the rise for 8 consecutive years and the export price has also trended upward after the continuous decline over the past 5 years. The export volume of wood screws has increased for two consecutive years and the export price has also trended upward after a continuous decline.



### China Shows Continuous Decline in Car Production & Sales

According to China Association of Automobile Manufacturers (CAAM), in Nov. 2018 China's car production and sales showed a slight increase compared to the previous month; however, it still showed a significant decline compared to the same

month in 2017. In the first 11 months, China's car production and sales both showed continuous decline compared to the same period in 2017 and the decline margin became larger as well.

In Nov. 2018 China produced 2.4984 million units of vehicles, up 7.02% from the previous month and down 18.89% from the same month in 2017; 2.5478 million units of vehicles were sold in China in Nov. 2018, up 7.05% from the previous month and down 13.86% compared to the same month in 2017. Among the numbers, China produced 2.1229 million units of passenger cars, up 6.03% from the previous month and down 20.46% from the same month in 2017; 2.1735 million units of passenger cars were sold, up 6.19% from the previous month and down 16.06% from the same month in 2017. China produced 0.3754 million units of commercial vehicles, up 13% from the previous month and down 8.69% from the same month in 2017; 0.3743 million units of commercial vehicles were sold, up 12.32% from the previous month and up 1.68% from the same month in 2017.

In the first 11 months, China produced 25.3252 million units of cars (down 2.59% from the same period in 2017) and 25.4197 million units of cars were sold in China (down 1.65% from the same period in 2017). In terms of passenger cars, China produced 21.4741 million units (down 3.37% from the same period in 2017) and 21.4784 million units were sold in China (down 2.77% from the same period in 2017); in terms of commercial vehicles, China produced 3.851 million units (up 1.97% from the same period in 2017) and 3.9413 million units were sold in China (up 5% from the same period in 2017).

## Taiwan Fastener Export in First 11 Months of 2018 Reaches New High at US\$ 4.4 Billion

As of the end of November 2018, Taiwan's fastener export value in the first 11 months of 2018 reached a new high at over US\$4.4 billion.

According to the statistics of Taiwan Industrial Fasteners Institute (TIFI), Taiwan exported 131,354 tons of fasteners in November 2018, down 8.09% from October (also down 0.98% from the same period in 2017). In the first 11



months of 2018, Taiwan exported more than 1.53 million tons of fasteners to the world, up 5.14% from the same period in 2017.

The average price of Taiwan's fastener export in November 2018 was US\$2.888 per KG, down 0.05% from October 2018 but up 2.39% from the same period in 2017. The average export price in the first 11 months was US\$2.881 per KG, up 7.53% from the same period in 2017.

According to TIFI, from January through November 2018 the total value of Taiwan's fastener export reached more than US\$ 4.4 billion, a surge of 13.05% from the same period in 2017, which means the total value of Taiwan's fastener export in the first 11 months has exceeded the record in 2017 and has reached new high for two consecutive years. It is expected that Taiwan's fastener export is very likely to reach new high again in both export volume and export value.



#### Total Car Sales in Malaysia in 2018 Increase by 3.83%

Malaysian Automotive Association (MAA) announced the sales of various vehicle types in Malaysia in 2018. The combined sales of all vehicle types reached 59,8714 units (up 3.83% from 576,635 units in 2017); sedans reached 533,202 units (up 3.6% from 514,679 units in 2017); commercial vehicles reached 65,512 units.

Malaysia's 2nd largest car manufacturer, Kancil, showed the highest sales in sedans in 2018 to 227,243 units (representing 37.95 of the total sales); Japanese Honda showed the sales of 65,551 units

(representing 10.95%); local car brand Proton showed the sales of 64,744 units (representing 10.81%).

#### **Companies Development**

The total hybrid car sales in Malaysia in 2018 reached 18,754 units. BMW showed the highest sales to 7,434 units, followed by Nissan (5,826 units), Honda (3,625 units), Volvo (919 units), Toyota (852 units) and Mini (98 units).

#### **PSM International Wuxi China Plant Renovation Project Completed**

PSM International's Wuxi China plant was expanding its cold form and machining capability and capacity in 2018. Its effort has been well paid off by winning substantial strategic important projects from an international 1st tier Automotive supplier.



Other than production expansion, it also built a new room for Laboratory, CMM and optical inspection. It had upgraded its Lab to improve the raw material chemical analysis and mechanical properties test. A new coordinate measuring machine has been purchased in CMM room to measure

precision parts and its dimensional layouts. The room is also equipped with machines capable of evaluating surface roughness and contour. On the optical inspection room, it had space to further expand its capacity by adding new equipment. This expansion project was completed in Oct 2018.

PSM's Wuxi plant will continue to expand its capability and capacity in order for the company to serve customers well and fulfill customers demand on quality, quantity and diversity of parts. Once the expansion project is completed, together with its sister company in Pembroke UK, it is capable of serving the world with its cold form products.

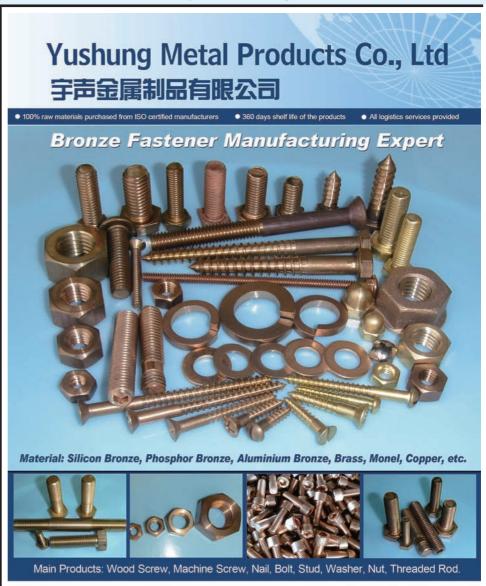
#### Strategic Cooperation Signing Ceremony Between PSM and AFS

On November 12, 2018, PSM International and AFS Co. Ltd. held a strategic cooperation signing ceremony in Wuxi, China. CEO of PSM International, Mr. Suzuki and President of AFS, Mr. Seo attended the signing ceremony.

This signing ceremony has established a strategic partnership beneficial for both sides. PSM and AFS will work hard together in product research and marketing to provide high quality fasteners and service for the Korean market. The signing has marked the establishment of a long-term and stable relationship that will spearhead PSM International into the Korean market.

Mr. Suzuki and Mr. Seo have expressed their intentions to deepen the relationship between the two companies by working hand in hand in order to forge a prosperous future together in the Korean market.







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#### Shanghai Dragon Industrial Engineering's Explosion Venting Bolts Certified to American FM Standard

The explosion venting bolts developed by Shanghai Dragon Industrial Engineering (SDIE) passed the certification audit of American FM, a third-party inspection body. SDIE becomes the world's second and China's sole FM-certified company for its

explosion venting bolts.



FM is one of the most stringent QC inspection bodies in the U.S. and represents the world's top level certification. It indicates to consumers that a product or service passes the

inspection under American and international standards.

Acquiring the FM certificate means the performance of SDIE explosion venting bolts is approved by a renowned third-party inspection body, recognized by global clients, and that the bolts are allowed for global sales and application.

Explosion venting bolts are used in hazardous chemicals warehouses, nuclear power plants, and industries including petrochemical, electronics, new energy, medical and military, where indoors explosion is a potential threat. They are used to ensure instantaneous accurate pressure relief from explosion venting doors/windows/walls/roofs, resolving issues of inaccurate pressure relief from calcium silicate explosion venting walls/roofs.

Explosion venting bolts can release pressure via quantizing explosion venting pressure. Fire-proof construction design regulates that explosion-prone factories must have pressure relief facilities. The shank of explosion venting bolt is specially coated for chemical corrosion and rust resistance. The aluminum washer of the bolt is curved at a certain degree and attached with EPDM rubber from the bottom for water resistance. The load capacity of the bolt ranges from 30-70kg, adding more convenience in designing the bolt.



### Bossard Receives Highest Supplier Recognition Award from John Deere

Bossard North America and Bossard Mexico has again earned recognition as a partner-level supplier for 2018 in the John Deere Achieving Excellence Program. The partner-level status is Deere & Company's highest supplier rating.

Bossard both in the USA and Mexico was selected for the honor in recognition of its dedication to providing products and service of outstanding quality as well as its commitment to continuous improvement. Bossard is the major supplier for over 8,000 different fastener product solutions with application engineering and customer logistics to John Deere's 27 plants in North America.

In the John Deere Achieving Excellence Program, all suppliers are evaluated annually in several key performance categories, including product quality, cost management, on-time delivery, technical support and wavelength, which is a measure of responsiveness. John Deere Supply Management created the program in 1991 to provide a supplier evaluation and feedback process that promotes continuous improvement.



#### The Würth Group to Establish Asia Pacific's Largest Supply Chain Center in Haiyan (China)

On Dec. 04, the representatives from German Würth Group HQ and the company's guests from China together attended a ceremony at Haiyan Economic Development Zone for the launch of its 2nd phase of supply chain center in the greater China region.

The Würth Group has been dedicated to fastener R&D, trading and service and has been also a leading assembly technology solutions provider in the market for global customers. Its total sales in 2017 reached €12.7 billion. The project of the Würth Group's Asia Pacific's Supply Chain Center was signed and witnessed by German Chancellor and Chinese Premier in 2015 and was officially set up at Haiyan Economic Development Zone in 2016. The fastener industry in Haiyan has evolved into a very well-developed supply chain and The Würth Group's project in Haiyan will specifically focus on warehousing, logistics and trade of hardware.

According to Larry Stevens, CEO of Würth China, the Würth Group chose Haiyan from more than 40 locations in China. As soon as the 2nd phase of the project begins operation, various types of fasteners will be shipped from the Center to many other

regions in Asia Pacific. Automated systems and paperless devices will be adopted and IoT and data intelligence will be introduced into manufacturing and operation as well to greatly enhance efficiency.

### WURTH # GROUP

### Würth Group Continues Down the Road to Success

According to the preliminary annual financial statement, the Würth Group reports a sales volume of EUR 13.6 billion in 2018 (previous year: EUR 12.7 billion). This corresponds to a growth of 7.1 percent. Adjusted for foreign currency effects, growth comes to 8.6 percent. All of the individual regions reported successful development again in the past year. With respect to the business units, Electronics and Electrical Wholesale showed above-average growth rates.

According to preliminary calculations, the operating result of the Würth Group is between EUR 860 and 880 million, which is a new record and a clear increase over the previous year (2017: EUR 780 million). "We are highly pleased about this positive result. It provides proof of the fact that thanks to our strategies and services we are still an important partner for our customers in trade and industry," explains Robert Friedmann, Chairman of the Central Managing Board of the Würth Group. E-business sales in 2018 amounted to EUR 2.4 billion and grew at above-average proportions compared to Group sales.

The Würth Group expects sales growth in the moderate single-digit range as well as a proportionately rising operating result in 2019. "Due to an economic slowdown, the year 2019 will certainly become a bigger challenge than 2018. Nevertheless, there is still no cause for concern, as the company is based on stable ground," says Friedmann about the expectations for the new business year.



#### Asahi Kasei Plastics North America Wins SPE Automotive Innovation Award in the Chassis/Hardware Category

Asahi Kasei Plastics North America, Inc. (APNA), a global plastics compounder, has received the "Most Innovative Use of Plastics" award in the Chassis/Hardware category from the Society of Plastics Engineers (SPE). This recognition was for the engineered material used in the High Strength Self-Tapping Composite Nut that was developed jointly with Fiat Chrysler Automobiles (FCA) and ITW Deltar Fasteners.



The award was presented during the SPE Automotive 48th-Annual Innovation Awards Competition and Gala on November 7, 2018, in Livonia, Michigan. This competition is recognized as one of the largest of its kind in the automotive and plastics industry and is made up of dozens of OEMs, tier suppliers and polymer producers from around the world.

The award-winning composite nut, created with Asahi Kasei's Leona<sup>TM</sup> 90G55, was identified as top in the Chassis/Hardware category because it has underlined significant benefits compared to the alternative metal or polymer nuts that currently exist in the market. Asahi Kasei's innovation offers a 2.3-pound weight reduction, reduced CO2 footprint and cost savings per vehicle produced.

"It is great to be in the winning circle at SPE again" said Ramesh Iyer, President of APNA. "This award is a testimony to Asahi Kasei's values of Creativity and Challenge, as well as a supporting milestone of our company's mission statement to provide innovative plastics and services that drive growth for our employees, customers and communities".

#### **Association News**



#### Jiangsu Fastener Association was Established in November 2018

On November 28, 2018, The Fastener Subdivision of Jiangsu Province Machinery Association was established and held its first annual member meeting and association establishment at Changshu City International Hotel. President of Changshu City Standards Factory Yong-Fong Chiang was elected as the 1st Chairman.

Chiang said, "I will lead all member fastener enterprises in our province to reinforce their presence in the advanced domestic and international markets. In the domestic market, we'll aim at expanding business reach to higher value added industries such as aerospace, railway, hi-tech building, automotive, medical, etc., while in the international market, we'll focus on diversifying our product categories at higher application level, such as developing high-strength special materials and increasing the technical level and added value of our exported products. Meanwhile, the fastener industry in China should continue its road to the advancement of the entire supply chain and make effort to improve itself with growing orders and demand for hi-tech fasteners, in order to strengthen its fastener R&D capabilities and quality level, as well as accelerate technology upgrade to outpace other domestic and overseas leading companies."

#### **Acquisitions**

#### **Bufab Acquires Rudhäll Industri AB**



Bufab has acquired the Swedish company Rudhäll Industri AB ("Rudhäll") including its three wholly owned subsidiaries ("Rudhäll Group"), with annual sales of approximately SEK 210 million.

The Rudhäll Group is a producer and distributor of components and other C-parts to the Swedish and European markets, specialized in advanced machined components. It consists of three units in Sweden and one in China. Approximately half of the total sales refers to distribution and about half to in-house production. Rudhäll was founded in 1952, and has since 2004 been owned and run by its current Managing Director, Jesper Emanuelsson. Under his leadership, the company has expanded organically and via acquisitions to an international supply chain partner to customers across many industries. In 2017, Rudhäll Group had 74 employees and sales of approximately SEK 210 million with a 9% normalized operating margin.

The acquisition will be financed within Bufab's existing credit facilities. The purchase price amounts to approximately SEK 100 million on an enterprise value basis of which the majority will be paid upon closing of the transaction. The transaction closed and took effect immediately, and were reported within Bufab's segment Sweden.

#### **Motor City Industrial Acquires Smith Fastener**

Motor City Industrial, has announced the acquisition of Smith Fastener in partnership with its 3rd generation owner, Brian Smith. This represents the third



acquisition by Motor City Industrial and further expands product & service offerings available to customers from diversified sectors and geographies. The combined companies now serve over 20 states from 7 locations with 135 employees.

Smith Fastener is a distributor of industrial consumables and ancillary products throughout North America from three locations in West Virginia, Pennsylvania and Texas. Founded in 1965, Smith Fastener offers supply chain solutions for over 20,000 SKUs, including corrosion resistant coating services for mission critical parts. Not only does the company offer supply chain engineering and technical support, but Smith Fastener also provides in-house emergency fabrication of custom MRO components to minimize downtime for its customer-partners.

Motor City Industrial is backed by Kian Capital Partners and Oakland Standard Co. Both firms are experienced in the industrial distribution sector and committed to additional partnerships that will expand Motor City Industrial's products, services and geographic footprint.

### Calsonic Kansei and Magneti Marelli to Create a Leading Independent Automotive Components Supplier

Fiat Chrysler Automobiles N.V. ("FCA") (NYSE: FCAU/MTA: FCA) announces that it has entered into a definitive agreement (the "Transaction") to sell its automotive components business Magneti Marelli S.p.A. ("Magneti Marelli") to CK Holdings Co., Ltd. ("CK Holdings"), a holding company of Calsonic Kansei Corporation ("Calsonic Kansei"), a leading Japanese automotive component supplier. Following the closing of the Transaction, CK Holdings will be renamed as Magneti Marelli CK Holdings\*. The combined businesses of Calsonic Kansei and Magneti Marelli will create the world's 7th largest global independent automotive components supplier based on total revenues.





The agreement represents a transaction value of EUR 6.2 billion. The Transaction is expected to close in the first half of 2019 and is subject to regulatory approvals and other customary closing conditions.

The Transaction represents a unique opportunity to combine two successful businesses to create one of the leading global independent automotive components suppliers, with combined revenues of EUR 15.2 billion (JPY 1,975 billion). The combination is a decisive step towards both companies' strategic ambition to become a leading globally-diversified tier-one supplier.

The combined company will be well positioned to serve its customers around the world due to its enhanced scale, financial strength and the highly complementary nature of its combined product lines and geographic footprint. The new entity will operate out of nearly 200 facilities and R&D centers across Europe, Japan, the Americas, and Asia Pacific.



#### Nucor Acquires Precision Castings Company in Mexico

Nucor Corporation announced that it is acquiring Corporacion POK, S.A. de C.V. (POK), a fully integrated precision castings company with a facility in Guadalajara, Mexico. POK produces complex castings and precision machined products used by the oil and gas, mining and sugar processing industries.

POK produces a wide array of precision castings using steel, bronze, iron and specialty exotic alloys. Founded in 1894, POK has a long operating history and strong management team, which is a natural fit for Nucor's existing cold finish businesses and complements Nucor's acquisition of a cold finish facility in Monterrey. The acquisition of POK will enable Nucor to broaden its current product offerings and gives the company the opportunity to increase sales into new and existing markets. POK currently employs 425 people at its Guadalajara production facility.

In addition to the Nucor ATP Mexico cold finish facility in Monterrey, Nucor's current Mexican operations include several sheet steel processing facilities as part of its Steel Technologies joint venture with Mitsui & Co., as well as a steel sales office. Nucor is also building a galvanizing line with its joint venture partner, JFE Steel Corporation of Japan, to serve the Mexican automotive market.

