Feature of the Month:
Fastener Manufacturing Equipment Makers

by Fastener World

There are over 1,400 fastener makers in Taiwan fastener industry exporting over NTD 100 billion dollars worth of products every year at an export proportion of 90%. One of the main pillars supporting this fastener kingdom are the fastener equipment makers in Taiwan. Over our interviews in the past year, we have seen more and more successors taking over their predecessors' business. The point to our interest is a characteristic that they share.

The former president of the American General Electric Company said that if a company does not do an internal reform to keep up with the world trend then it is doomed to be kicked out of the game. When international leaders of the fastener industry are headed at the light speed for high-end digitization, Internet connectivity and production data integration to form a new competitive edge, maybe it is time the Taiwanese fastener industry started to keep alert? When 2019 is to become the birth year of 5G which is set to become the new form of telecommunication, all production technology, the instant communication between a corporate and clients, and order transaction will accelerate at an ultra-light speed. Will the fundamental integrity of Taiwan fastener industry be able to cope with the age of acceleration in time?

In this feature column, we interview **Wen Yang**, **Yee Kun**, **Lantech**, and **Hung-Yin**. Most of these companies have rolled out new products or done major improvement on current products, and some of them have transitioned to the second generation. Let's have look at their latest development and we hope for them to continue setting milestones in the future.

After interviewing many Taiwanese fastener machine makers, we found their successors have more different ideas than the first generation did. It is not that their ideas are in conflict with the first generation, but that they are thinking of ways to sustain and revolutionize the business of the first generation within the framework of current and future international trends. So what are their courses of action to pull this out? The obvious characteristic and keyword is "digitization". You would often hear things like this from them: "We want to be able to predict when our client will want to place an order", "We want our clients to be able to know the status of order and product at any time", "We need to digitize our documents to avoid human transcription error", "We want to put various production information into a database and then analyze and fine-tune our manufacturing procedure". For the first generation this sort of innovation might be the last thing to think of, but for the successors, they already cannot wait because Taiwan is a vast OEM market and the accelerating pace of the world market awaits no one. Get any slower and your orders will be won over by other overseas companies that are faster and cheaper. Therefore, digitization and integration of production information are the key to speeding up the evolution of Taiwan fastener manufacturing equipment industry. Certainly the same goes for Taiwanese fastener makers because they share the same bond with fastener machine makers.

Wen Yang Machinery Co., Ltd. (Ming Tang)

Quick Components Release/Repair & Exclusive "Centrifugal Feeder"

by Nai-Wen Chang, Fastener World

Wen Yang dedicates to improving stability and achieving high operational efficiency for its machines in which the patented design significantly reduces machine malfunction. The company has come up with complete after-sale services and set up standard management for components inventory so that clients can purchase and replace components anytime. The client-oriented business pattern enables the company to increase 30% of sales over last year and gain popularity in the U.S., Europe, Japan, and South Korea as a specified brand for global major corporations.

Quick Components Release and Repair to Save You the Trouble of Long-Distance Travel

Export-driven Wen Yang knows the difficulty of after-sales repair service and operators training. Therefore, besides coming up with a design for operators to use machines with convenience, Wen Yang had a monumental breakthrough in the structural design of machinery components. The company altered all damage-prone components and designed a quick assemble/release device for easy replacement by the operators without sending back their machines to the maker for repair. They just have to inform the maker of the components to replace with, and the components will be shipped out of the standard components inventory, thereby saving the time of personnel back-and-forth travels.

Well-Acclaimed Centrifugal Feeder & Patented Forming Machine

The company developed the centrifugal feeder as a solution to traditional vibratory feeders with low-speed feeding and noise caused by auxiliary wind blows. The inner side of the feeder bowl uses 10mm Polyurethane to increase resistance against abrasion and oil, eliminating the need to specifically clean a screw if it is not heavily stained with oil, and significantly reducing the chances of collisional peeling of the coating and surface as well as thread damage. Traditional vibratory feeders are hand-made and often need to be sent back to the maker for a repair job because the job is pretty strenuous. In contrast, Wen Yang's centrifugal feeders consist of all standardized components, each of which derives from a full-fledged design layout and is made with CNC machines, much like manufacturing a set of equipment. Whenever clients need a components replacement, the company can ship immediately and thus drastically lower the difficulty of repair. Currently the company has developed a centrifugal feeder for feeding 200mm-500mm screws.

Wen Yang, the relentless developer of new machines, has patents for 2-die-4-stroke and 3-die-6-stroke screw forming machines with features including independently adjustable upper and lower punches, P.K.O. function for each individual punch, new independent fixture and new discharge device. These innovative features are to allow operators to quickly operate machines and set up equipment, and to increase machine stability during screw production.

The company's washer assembly machines have all components interchangeable according to different specifications, therefore allowing for much more convenient and speedy adjustment and making screw and washer assembly extremely fast and stable.

Rooting in Taiwan & Eyeing the World Market

Wen Yang's current client base scatters across developed countries such as Germany, France, the U.S., Japan, and South Korea. The company's machines are mainly tailored to the production of high value-add screws such as those for motor vehicles and aerospace. In the future it will introduce high speed screw manufacturing machines that can produce average screws and standard screws catering to the commercial market, and will tap into developing countries such as Vietnam, India, Thailand, Malaysia and Brazil. These countries with great market potentials are expected to attract an enormous amount of foreign investment.

Sam Chang, deputy general manager of sales, said "Screws and nuts are a critical industry to Taiwan. Better business performance in this industry means the screw manufacturing equipment industry will follow suit. The requisite to manufacture high quality screws is to have stable and high quality screw manufacturing equipment. I believe our persistence and endeavors will bring larger contributions to Taiwan."

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Yee Kun Machine Industrial Co., Ltd.

Professional/Customized Screw Manufacturing & Second-Hand Machine Overhaul/Sales

by Nai-Wen Chang, Fastener World

With over 30 years of history, Yee Kun has the edge of knowing all sorts of machinery physics and has successfully tapped into different parts of the world. The company has many self-developed machines as part of its production equipment and devotes to developing various customized screws that span a diversity of types with guaranteed quality. General manager Mr. Kun Ming Liu started at age 17 as an apprentice in a machinery factory. That was how his machinery career began. He built his knowledge base by learning everything from fundamental structure to manufacturing methods. Later, with his brother, he started a business manufacturing heading machines and threading machines. After he got married the brothers have lived separately, and he founded Yee Kun with his wife.

Tailor-Making Special Customized Screws and Machines

Yee Kun started by helping regular customers overhaul their machines. Later it began to develop Taiwan's first open die header and applied for a patent for manufacturing double-end screws for scooters. At that time, 4 major fastener companies outsourced the manufacture of double-end screws to Yee Kun. That was when Yee Kun started to improve technique and accrue experience. Then it began to extend services to special screw OEM and second-hand machines sales and overhaul to help clients manufacture products more efficiently.

Yee Kun was the very first company developing double-end screws that have been supplied to Taiwanese component OEMs over the years. With superb technique, the company manufactures and sells special customized screws such as double-end screws/bolts, infinite-length screws and bolts, and multi-stroke screws and bolts. Currently its patented open die headers are mostly used in its own production line and can be appended with auxiliary equipment according to clients' product design. Performance boost can be customized according to product demand.

Quality-Assured Second-Hand Machines Available with Overhaul and Trial Run Services

Yee Kun is a trusted source of second-hand and used screw/nut manufacturing equipment which it acquired from and sold across the world. It can overhaul the equipment as per clients' demand and offer professional tests for clients. "We have heard a foreign customer said he bought an unworkable second-hand machine which a maker claimed to work just fine. It turned out that the machine could not even run when it reached the factory. Things like that never happened in Yee Kun. We do a pre-shipment trial run in front of our clients and offer trial manufacture for clients to test or make samples and rest assured that the machines they have purchased are workable."

Yee Kun has one of the industry's best skills in customized machine overhaul. Once he overhauled an M16X230L header into a 255L model as a client requested; another time he helped a client rebuild a common header into a hollow riveter and rebuild an open die header and hex head trimming machine into a secondary processing machine; other times a relative was looking for the right material mixing equipment for his new restaurant and Yee Kun designed a tailored machine for him.

The second generation who has started to participate in the company's business turns his focus on developing client base in new markets, and actively attends exhibitions there to expand sales, utilizes online marketing, attends activities of multiple associations, and advertises. The second generation is evaluating exhibitions in emerging markets and hopes to increase global brand awareness and serve more clients from various countries. On the other hand, the first generation focuses on passing on experience and improving technical capabilities which allow the company to solve any machine problems.

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Thread Tapping & High-Frequency Induction Heating Machines Maker with over NTD100 Million Revenue

Lantech Industrial Co., Ltd.

by Dean Tseng, Fastener World

From a Repair Specialist to a Developer

Lantech has been in business for 30 years since 1986. General manager Mr. Xiao-Wei Lan said his major was mechanical engineering and he was a professional distributor of European machine tools including thread tapping machines. He found the collaborative partners were selling low-priced knockoff thread tapping machines, and that prompted him to start manufacturing and refining imported thread tapping machines in 2012. "Thread tapping machines are at fair prices with great market demand, and they are less complex in mechanical structure, so I decided to start off from here." While he was selling machines, he had the opportunity to repair various overseas high-frequency induction heating machines and knew all the knowledge and theories. These machines were at very high import prices that were out of the question for many clients. In order to enlarge the client base, he started to develop his own machines in 2000, and it turned out that the cost of self-manufacture was only one-fifth of that through importing machines. His original machines swept the market immediately after rollout. Now the general manager is a Taiwanese expert of induction heating machines and thread tapping machines, the two of which alone have brought him over NTD 100 million revenue a year!

Lantech Thread Tapping Machine
Auto Forward/Inverse Tap + World's Lightest Tapping Arm

How did he manage to reach the revenue? The answer is Lantech's delicate product design. The general manager explained, "Our tapping machines have vertical precision. As for our pneumatic tapping machines, users often feel troubled when they cannot control tapping depth, so we designed the most economic and effective device with automatic forward and then inverse tapping mechanism to complete the functions of our pneumatic tapping machines."

Due to heavier tapping arm structure and vibration caused by the tapping force, an ordinary thread tapping machine can barely tap threads below M2. Lantech developed the world's lightest tapping arm and power tools with electronic control of speed and torque to fast tap M1-M2 blind threads in response to the demand for tapping fine threads.

Lantech hydraulic thread tapping machine is equipped with a quick-change gear box that is replaceable via the opening and closing of fixture. Additionally, the frictionless-arm tapping machine has the following features: (1) economical price, (2) fastest positioning, (3) able to tap M1 miniature threads, (4) can act as a supporting arm for fast screw fastening, (4) can remain perpendicular and completely absorb torque, significantly reduce operators' arm damage and improve fastening tightness.

Thread taps tend to break during tapping and once they do they would stick in the whole with little chance to remove them. To solve that, Lantech provides a broken tap remover that utilizes electric discharge to melt the tap and remove it from the thread hole.

Induction Heating Machine
Energy Saving and Excellent Temperature Control

All the components of Lantech induction heating machine have high precision and strong endurance because they are sourced from renowned brands across the world. Developed by Lantech, the trust-worthy temperature control circuit allows clients' heated objects to retain stable quality. This machine is widely used in fastener manufacturing procedures including thermal refining of materials, material heating and forging, resin hardening of anti-loosening screws, and hardening of the tapping portion of self-tapping screws. Through thermal output magnitude and precise temperature control, the induction heating machine allows clients to produce fasteners with the least energy consumption, top speed and top stability. The general manager said his company provides on-site installation, after-sale maintenance and components supply for the induction heating machine and the aforementioned thread tapping machine.

Continuing R&D in 2019

Despite the fact that the U.S./China trade war in 2018 has somewhat impacted sales, Lantech was able to remain stable and perform well. The company rolled out full-fledged M1-M2 miniature thread tapping machines and screw fastening machines for miniature screws up to M3. Furthermore, the company developed heating machines for smaller anti-loosening screws and smaller self-tapping screws. "We will develop best-performing products, help clients increase production, reduce product defects, and increase applications and opportunities for other products to meet our clients' expectation."

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Continuous Business Expansion and R&D-Driven Best Sales

Straightening Machine Magnate, Hung-Yin Enterprise

by Dean Tseng, Fastener World

When it comes to screw straightening machines, general manager Mr. Wu-Zhang Chang is undoubtedly the founding father of this field and a legendary figure who started as a layman but ended up an expert. He started off with hardware, die and punch manufacture, and then entered the fastener industry, which only took him 3 years before he invented the world's first screw straightening machine. His machine does not adopt the traditional hydraulic straightening method, thus increasing straightening capacity by 5 folds, from 10 pieces to 50 pieces per minute, pushing daily capacity to well over 20 thousand pieces of straightened screws. If you think this magnate only sticks to straightening machines, think again because he stepped out of his box and invented a vibratory feeder to work in conjunction with his straightening machine. The high efficiency and durability of his machine combined with the feeder earns critical acclaim from a well-known American public company that could start a negotiation of future collaboration with Mr. Chang. Besides the U.S., Hung-Yin sells straightening machines to Poland, Turkey, Southeast Asia and many other regions.

Robust Demand from Clients
Current Plant in Expansion and New Plant to Come up Soon

Ever since the rollout of his straightening machine, order intake has been increasing like it never stops and Hung-Yin has to work around the clock because "our plant space is less than enough for the overwhelming amount of demand," said the general manager in smiles. He plans to expand his current plant from 430 square meters to 826, which he expects to complete in mid-2019. By then the expanded plant will house 20 sets of straightening machines and he will be able to straighten 500 tons of screws per month for clients which is a sharp increase from the current 150 tons capacity. This is still not enough for him as he has included in his business blueprint a 3,636-square-meter plant currently under construction. The new plant is positioned at the back of the current one. He said to move in the straightening machine manufacturing division once the new plant is completed next year. Clients' strong support has propelled him to enlarge his business realm no matter the cost and enter the American and Latin American markets (Mexico and Brazil).

Business Focus in the Near Future:
Hung-Yin Large Vibratory Feeders

Three years ago he developed the vertical-container type large vibratory feeder (1M and above) exclusively for long screws. The feeder was highly recognized within the industry since its rollout, and an American company came and placed an order for its reputation. Hung-Yin is currently assembling a straightening machine and two 1.5M vibratory feeders for the American client. In case you don't know, he said it took him just 2 to 3 years to develop all by himself this vibratory feeder unique to Hung-Yin. When asked about the reason that he decided to tap into this field, he said his own vibratory feeder is guaranteed to keep up with the speed of his straightening machine that runs 5 times faster than its counterparts, therefore exerting maximum compatibility and efficiency. What he didn't expect was that he got massive acclaim from the industry when he rolled out a straightening machine installed with the vibratory feeder. He said Hung-Yin will officially announce the rollout of large vibratory feeder for long screws after completing the new plant.

Business Triangle:
Precision, Specification, Zero Complaint

How did this former layman taught himself to invent excellent straightening machines and vibratory feeders? He said his background in hardware, dies and punches allows him to accrue proficient knowledge in production precision which inspired him to develop high precision and high speed straightening machines with no damaged screw shank and thread.

A big feature of Hung-Yin straightening machines is fully-utilized component specification. "All components have pre-determined sizes. Clients in need of maintenance after purchase will only have to buy components from Hung-Yin and simply mount them onto the machines by themselves, and therefore they save a bunch of time replacing components," he explained. Additionally, Hung-Yin straightening machines are durable and the company has not received any complaints since it shipped the first set of the machine.

Lastly, the general manager said he was grateful that the last interview report by Fastener World Magazine helped him increase overseas sales proportion to 70% and half of his overseas clients learned his reputation through the report before they place orders. We hope to see him break a new business record after the completion of the new plant. ■

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