

Takahashi Metal: Making unique products for diverse business needs



"Whilst some customers may not know our company's name, they still come to us for our unique technologies."

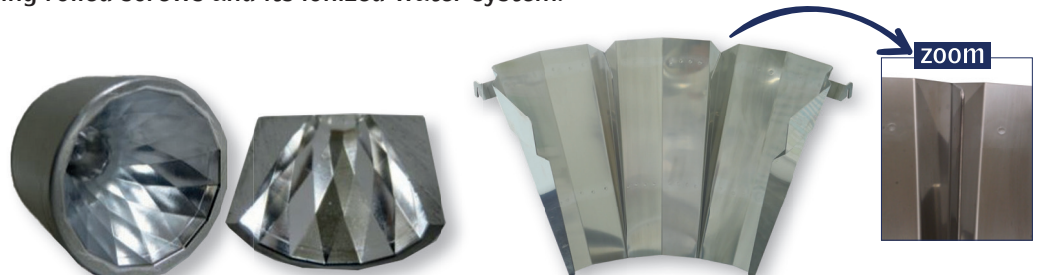
Yasuyuki Takahashi,
President & CEO,
Takahashi Metal Industries

Price competition is getting tougher globally, but Japanese companies continue to have a large share of niche markets thanks to their multi-product, multi-functional production. Takahashi Metal Industries is one of these businesses, and its unique press technology makes it possible to achieve mirror-like surface finishing through the press process without the need for plating.

"Conventional screw products only utilize press technology, but our mirror surface processing is a one-stroke process. Takahashi Metal is the only company in the world that has this capability," explains Yasuyuki Takahashi, President and CEO of Takahashi Metal Industries. "The product's unique name is Reflector. And whilst some customers may not know our company's name, they still come to us for our technologies."

The company – whose business segments include parts processing and environmental products – also makes a range of other unique products serving diverse industries, including its electrolyzed ionized water system. "Instead of classifying alkaline water as waste, we discovered that it could remove oil and prevent rust. It is an advanced and saleable product

Takahashi Metal, whose business segments include parts processing and environmental solutions, makes a range of unique products serving diverse industries, including rolled screws and its ionized water system.



Reflector

Chute parts using fiber laser welding technology

which is uniquely developed by our company," says Mr. Takahashi. "Also, it helps deal with progressing environmental concerns. Alkaline water is produced by SMEs like us, and big international companies have started to contact us for our products. Companies that have been using our environmental products started to learn about our parts processing business as well, thereby, increasing our sales."

In Japan, up to 3.5% of annual GDP goes to research and development, and as a business focused on innovation, Takahashi Metal Industries puts a lot of investment and resources into this area to come up with new solutions for its customers.

"Another unique feature is our tie-up developments with our customers. The one-stop service plus we offer is one of our efforts to increase our competitive capabilities and our three distinctive divisions. We have been incorporating our know-how into our proposal and development of items and parts. While major manufacturers invite different partners to work on every stage, we maximize our efforts to benefit our customers through a one-stop service."

Across its diverse business areas, Takahashi Metal has already expanded to China and Thailand, giving the company access to international markets for its

few years has been to broaden the field of our activities. The next stage of our expansion, however, involves building strategic partnerships. Hence, we are actively looking for partners to achieve our goals, to improve our services and to launch new services. During the pandemic, we launched a new business model which is quite ambitious for an SME. It is now time to seek strong partners and work on something strategic."

The strength of Takahashi Metal Industries is that it has a system that can provide similar manufacturing, sales, and services not only to Japan, but also to China and Thailand. A whole division of its business is dedicated to environmental products and affiliate companies like global automotive parts suppliers, and is now further diversifying into products including batteries, parts for EVs, and solar panels.

"In addition, I have launched an economic consortium in this area for different companies to join," says Mr. Takahashi. "Through that, we can welcome a wide range of businesses, products and *monozukuri* which contribute to the environment. Our company growth is directed toward providing a global contribution. One of my goals is to ensure that our people are proud of our efforts of truly contributing to the environment, a concept that I want to pass down to the next generations."



TWIS: Takahashi Ionized Water System

"It is quite rare for subcontractors like us to do R&D, but we do," says Mr. Takahashi. "Our primary R&D division is Advanced Core Technology, and this is where we attempt to create ingenious technologies."

Its R&D activities rely on subsidies, with the company partnering with many stakeholders, including universities, research centers and manufacturers, and are driven by its commitment to *monozukuri*.

products. "We work with large-scale international customers working in automotive parts and agricultural equipment, and we will continue to move forward with these companies with our unique technologies," says Mr. Takahashi. "Our focus for the last



高橋金属株式会社

TAKAHASHI METAL INDUSTRIES CO.,LTD.

www.takahashi-k.co.jp

Circuit Design: Japan's finest wireless technology providers

Since its foundation in 1974, Japan's Circuit Design has been supporting the development of wireless technologies both in Japan and abroad.



Company building

Building on its founders' love of amateur radio, Circuit Design achieved its breakthrough in the late 1980s when the Japanese Ministry of Transportation approved the use of its remote engine starters in cold prefectures such as Hokkaido. At that time, as company president Yukinaga Koike attests, engine starters "accounted for around 80% of the company's overall turnover."

With the automotive industry in transition, however, the company has shifted its focus to industrial wireless modules, having introduced its wireless systems to the German market in 1992.

"The use of Circuit Design's radio solutions ensures the reliability and success of our customers' products."

Yukinaga Koike,
President,
Circuit Design, Inc.



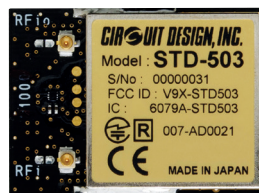
Though the industry remains a highly competitive sector in which to operate, Circuit Design

has been able to carve its own niche when it comes to wireless industrial solutions, offering high-quality products which distinguish it from competitors.

Looking to the future, the company has been developing Radio

Frequency Integrated Circuits (RF-ICs) that integrate low-power wireless module technology, an innovation that will be shared with customers in 2023.

Though international expansion is problematic and



2.4 GHz radio module



Engine starter

Radio modem

to a greater or lesser extent contingent on existing infrastructure, Mr. Koike is keen to emphasize that Circuit Design is open to collaborating with foreign companies: "If a market is ready and has its own regulation bills passed, then we are ready to target it."

In Japan, meanwhile, plans are afoot to expand the use of low-power wide-area (LPWA) devices for infrastructural monitoring, with an "Animal Map" system originally developed for wild animal tracking that can be installed in mountainous areas and used to monitor water levels in surrounding lakes and rivers.

CIRCUIT DESIGN, INC.
www.circuitdesign.jp

Walking together with clients towards sustainable growth

With over 400 employees across five diverse divisions, Komatsu Kaihatsu is committed to deepening relationships and strengthening communications with its business partners, employees and esteemed clients.



"We need to contribute to the development of autonomous vehicles that people judge to be safer than human-driven vehicles."

Naoto Komatsu, President,
Komatsu Kaihatsu Co., Ltd.

Founded over 50 years ago, Komatsu Kaihatsu has expanded its business from factory construction, building maintenance, dispatch of factory workers, logistics and packing materials, to automotive parts design

and development, maintaining its stance that quality is king when it

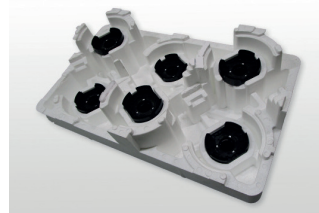


Corrugated cardboard modules for marine containers

comes to satisfying customer needs and building trust with them.

"We manufacture and sell high-quality logistics packaging materials that are optimal for the transportation of automotive parts and industrial machinery, and we would like to collaborate with local overseas companies," says Naoto Komatsu, President of Komatsu Kaihatsu. Although the domestic business in Japan is the bedrock of the current model, an eye is kept on opportunities further afield.

As major client Toyota Group expanded its business over the years, so too has Komatsu Kaihatsu, "growing and developing to cater to its needs," says Mr. Komatsu. And that continued growth, he predicts, will be in the design and development segments, where the company already has more than 280 engineers across Japan and Vietnam, with potential to spread



Auto parts (blower motor) tray into India, China, and even the U.S.A., in the near future.

"Electrification of cars, safer brakes, Advanced Driver Assistance Systems (ADAS), autonomous driving..." these are some

of the design, development and testing areas currently in progress, and "within a few years, the company's software area has increased by 6.3 times, compared to 1.7 times for our hardware and 1.7 times for our mechanical divisions," Mr. Komatsu reveals.



Autonomous driving

"For Komatsu Kaihatsu, close cooperation with clients is extremely important, and we place the utmost importance on contributing to the improvement of driving safety," Mr. Komatsu highlights.

小松開発工業株式会社
www.komatsu-kaihatsu.co.jp

Hanken Works: High-quality *hakomono* for the global market

With a history spanning almost 100 years, Hanken Works is a leading manufacturer of specialized enclosures that meet the demands of several sectors.



"We're aiming to expand our *hakomono* all over the world."

Nobuo Matsuda,
President, Hanken Works Ltd.

A company that celebrates its 100th anniversary in 2023, Hanken Works manufactures specialized enclosures such as fuel tanks, hydraulic tanks and mufflers for construction, agricultural and industrial machinery.

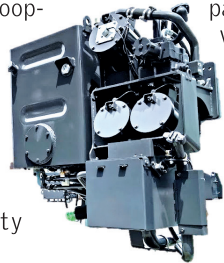
Hanken's enclosures, referred to in Japanese as *hakomono*, are

crafted with a dedication to *monozukuri* – the pursuit of perfection at the heart of Japanese manufacturing. For President Nobuo Matsuda, *monozukuri* comes down to precise role distribution – "this gives us good quality, cost and delivery results" – combined with a culture of close cooperation between divisions. "The excellence of Japanese *monozukuri* is its focus on collaboration and transparency," he says.

Hanken's quality commitment is illustrated, for example, by the



Hydraulic tank for excavator



Hydraulic tank assembly for dump truck

rigorous testing and welding procedures that guarantee the integrity of its tanks. "We're proud to say our leak ratio is the best in the industry," Mr. Matsuda says. "We're currently running a ratio of plus-minus 1% of leaks happening at the production site. If we do find leaks, we repair them using advanced welding techniques. This ensures we have the best possible product and our customers remain satisfied."

As the firm strives to boost the worldwide reach of its *hakomono*, Hanken's Indonesian plant, which is integral to this drive, is



Welding specialist

set to expand. "Indonesia is the country that procures products globally. From Indonesia our products go to many countries around the globe," Mr. Matsuda says. Hanken also aims to increase



Fender for bulldozer

sales within Indonesia, he adds, "The country's domestic market has a lot of potential. There'll be a large market there in the future."



www.hanken-works.co.jp/english

Providing unique manufacturing value and support across the entire production preparation period

Beginning the process up to a year and a half before launch, Uchida has shown how it can collaborate to free up resources for its Tier 1 customers.



"We would like to make our clients happy through the good *monozukuri* culture that we have created."

Yoshitsugu Uchida,
President & Representative Director, Uchida Co.

Uchida Co. is no longer just a die maker, far from it. Since its establishment in 1964, Uchida has evolved into a group of professional engineers and craftsmen focused

on developing high tensile materials that support customers' production preparations. From the automotive industry to aviation and medicine, strong and lightweight materials are in high demand.



Inner body parts made by Uchida

"Our main strength is our capacity to create dies that can handle difficult-to-process materials, such as high-tensile steel," explains company president, Yoshitsugu Uchida.

"We have many engineers with specialized know-how to meet the expectations of our customers."

With subsidiary companies in China and Vietnam, and employees from places such as South Korea and the United Kingdom, Uchida is able to share its technology with other countries, says Mr. Uchida. Longstanding relationships with the likes of Toyota Honda and Daihatsu, with whom it has forged a strong bond for over 25 years, are testimony to that.



Parts trials both in house and at production plant

"As cars are being electrified, they need batteries. Batteries are very heavy, so the demand to make the cars more lightweight



3D design based on simulation

remains. Therefore, our strengths will be needed more than ever."

With ambitions for a third location in Toyota's base in Aichi Prefecture, the president has a clear plan for Asian expansion: "To spread Uchida's DNA to the world and continue to contribute to the global automobile industry together with our partners." That cooperation is seen as a key to shared success.



www.uchidanet.co.jp

Engineered carbide products for a better future

For over 60 years, MMC RYOTEC Corporation has been supporting a variety of industries with its unique products.



"Our wear-resistant tools and carbide materials are custom-made and depend on the needs and demands of our customers."

Katsu Yamamoto,
President & CEO,
MMC RYOTEC Corporation

While Japan's aging population and declining birth rate present challenges for certain companies, for others they provide a rare opportunity to focus on the global market. And with 28% of the country's population already over 65, passing down knowledge to the next generation is becoming more crucial with each passing year. Increasingly intrinsic to its global brand, Japanese *monozukuri* is a point of difference that sets its businesses apart from competitors in China and Taiwan, where economies of scale hold sway over craftsmanship.

For new MMC RYOTEC Corporation president Katsu Yamamoto, craftsmanship represents the "value-added factor". But it is only one aspect of the company's continued success. "Our business strategy," Mr. Yamamoto underlines, "is to focus on providing consistent quality and technical support along with our products, which allows us to compete in the market and secure customers." Equally important is the notion of company evolution: "We have been manufacturing engineered carbide products for many years and are always looking to improve our skills



ROTARY DIE CUTTER

and techniques in the manufacturing process."

This desire for improvement can also be seen in the context of the firm's three business divisions. Rock tools have traditionally been MMC RYOTEC's top revenue generator. The SUPER MAXBIT series, which is mainly used to drill into underground aquifers and is thus instrumental in ensuring drinking water is clean and safe, can be applied anywhere in the world, and is already widely used in the U.S.A., Asia and Europe.



SUPER MAXBIT

The company's two other main divisions, meanwhile, are not far behind. Mr. Yamamoto again: "Regarding wear-resistant tools and carbide materials, we are proud to have launched a variety of high-quality custom-made products which satisfy the customer's needs in various fields of infrastructure."

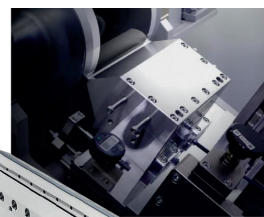
One such example is the use of MMC RYOTEC's slot-die technology in lithium-ion batteries, an increasingly important market as Japan aims to phase out conventional gasoline cars by 2035. The technology is used in precision coating processes, and customers can now choose whether the slot die's lip materials are made from stainless steel or cemented carbide, as

DIAEDGE SLOT DIE

High Precision Coating Tool
for various applications



MMC RYOTEC Corporation
A Group Company of MITSUBISHI MATERIALS



well as being able to adjust the coating's thickness after consultation with experienced technicians. Technical services such as fluid simulation and coating tests provide clients the opportunity to arrive at an optimal shape for their individual needs.

Nor is the company's evolution restricted to its range of products. A subsidiary of Mitsubishi Materials Corporation (MMC) since 1958, recent restructuring has seen MMC RYOTEC assume responsibility for its own sales division alongside production and development of products. Mr. Yamamoto adds: "In April 2021, the sales division was transferred from MMC to MMC RYOTEC, and we function independently in that regard. On the other hand, more than half of our sales come from MMC's overseas sales companies, and we have joined forces in entering overseas markets. The MMC Group has an excellent rock tools sales base in Mexico, and we will penetrate the South American mining and construction markets together."



ROCK TOOLS

"Our strategy," he continues, "is to develop and manufacture high-quality products in our mother factory in Japan, at which point our sales company

can deliver products within a short time from their local distribution center to the South American market." Overseas, the aim is to fully leverage MMC's existing global sales networks, by first accessing contacts and then dispatching engineers to foreign companies to join meetings regarding specifications.

Beyond Mexico, South America remains an important market for the company's rock tools, while China and Southeast Asia are next in line when it comes to products such as slot dies and rotary die cutters.

As far as the future goes, the key will be to consolidate the firm's market position: "Our target is the high-end market or field. We are aiming at high-end customers for all our business divisions."

In terms of products, Mr. Yamamoto is keen to emphasize MMC RYOTEC's "excellent range", before going on to describe the slot die as the "most exciting and most worrisome" among them. Exciting because the market is so fluid; worrisome because it can be hard to predict changes accurately and stay ahead of competitors.

Asked what he would like to pass on to the next generation of presidents when the time comes for him to step aside, his response is simple: "My goal is to keep expanding our operations so that we can celebrate our centenary in 2058 as an excellent supplier of engineered carbide products to infrastructure industries in the global market."

MMC RYOTEC Corporation
A Group Company of MITSUBISHI MATERIALS

www.ryotec.co.jp/en

Japan's conveyor belt and industrial transport robotics specialists



"We use our expertise and experience to solve customers' problems and expand our business domain as a total 'solution provider' for industrial transport operations."

Minoru Hamaguchi,
President, JRC Co., Ltd.

At JRC, we have manufactured conveyor belt components such as rollers, pulleys and stands for over 60 years. Our fully automated roller production line – the only one in Japan – helps us to

With the aid of the country's first and only fully automated roller production line, JRC provides tailored conveyor solutions to a wide swath of industries both in Japan and abroad.



deliver a consistent supply of top-quality products.



Main factory

Our conveyor parts can be found in thermal power plants, steel mills, mines, cement plants, recycling facilities, sewage treatment plants and other sites that support socially critical infrastructure. They are also widely used in civil engineering projects such as tunneling, reclamation and dam construction.

In recent years, we have not only provided products, but have also offered solutions to problems that occur at sites where conveyors are used, tying in with our company slogan: 'Discovery to Development'. We create based on the discovery of issues customers have, and look to provide answers that ensure products function well.

In addition to proposing improvements, we believe providing maintenance services for conveyor equipment will be central to our business model moving forward. We want to step up our development of remote monitoring systems that are tailored to our customers' varying

installation environments and conveying conditions.

While conveyor belts are our main business, we are also developing a 'smart factory' that uses robotics. With a compact design, it seeks to solve the manpower shortage arising in Japan due to



Solution

population decline. We want to introduce this technology overseas, as well; specifically, we aim to expand into developed countries with significant mining industries.

JRC Discovery to Development
JRC CO.,LTD.
www.jrcnet.co.jp/

SHIRAI TECH provides key glass scribing machines for a range of industries

In modern times, the average consumer is unaware as to how important glass processing is in regular manufacturing, and SHIRAI TECH plays a crucial role in ensuring that glass is processed to the highest standard.



Labor-saving equipment

"Scribing is the origin of glass processing." That is the mantra upon which SHIRAI TECH was founded over half a century ago, says president Hiroshi Shirai, who remains proud of the company's great responsibility.

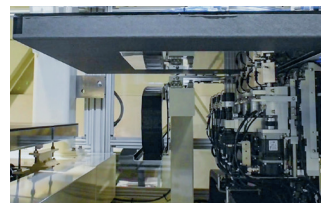
The company has progressed eagerly in technological innovation. "We have standalone machinery that can scribe glass with irregular shapes. This can be used in the processing of LCD panels for automotive applications. Also, the separation of irregular-shaped glass, which previously had to be

"We are looking to continue to help our customers properly produce, scribe and grind panels to meet their needs."

Hiroshi Shirai,
President,
SHIRAI TECH LIMITED

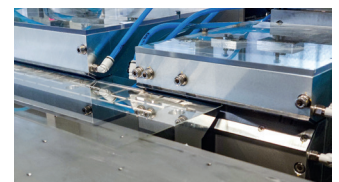


Robot-breaking (irregular shaped) done manually by humans, can now be processed in-line via robotics," Mr. Shirai explains.



Non-flipping scribing machine

"We also have developed a non-flipping scribing system that eliminates the need for inverting



Water scattering prevention grind the panel – which can cause damage – by scribing the top surface of an LCD panel consisting of two pieces of glass laminated together, then lifting it from above during the next stage, and scribing it from the bottom side."

"In addition, we have been proceeding with a new approach for the grinding process. We developed a special outer case that covers the grinding wheel, reducing the amount of water used to less than one-tenth (compared to our existing products), and further reducing subsequent cleaning and drying processes."

Since the launch of its computerized scribing equipment in the 1980s, SHIRAI TECH has been a pioneer in the glass industry and will continue to develop groundbreaking products in the future.

SHIRAI TECH
JAPAN
www.shirai-tech.co.jp/en

Mabuchi's fusion of *monozukuri* and logistics

With its unique 'Integrated Logistic System', Mabuchi has been able to combine the best aspects of manufacturing and logistics to provide unbeatable solutions for their customers.

Founded 68 years ago, Mabuchi started out as a packaging firm and over time, in line with the needs of its clients, the company branched out into logistics, which led to the creation of its renowned Integrated Logistics System (ILS).

"We started with a mandate that allowed us to create the entire process, from receiving the freight, inspection and packaging, clearing the different customs obligations and approvals, and finally shipping to the destination factory," explains company president Mikio Sakamoto. "At that point, we make sure the whole process is taken care of by us and in the best way possible for our clients."

When it comes to transportation of often large and heavy industrial goods, clients require the highest level of service and expertise, which is why many turn to Mabuchi's ILS to ensure their needs are met. Having built up its experience serving clients in the automotive and housing-related industries, the company embraces the values of Japanese *monozukuri* (craftsmanship) and *omotenashi* (hospitality) to offer clients a truly superior service, both in Japan and abroad.

"We believe that the spirit behind *monozukuri* of always thriving to respond to the client needs, is very intrinsic to Japanese companies and is something that we must continue to provide to the world. This spirit of always placing the customer first and always thinking of the customer needs has always been the most important priority," explains Mr. Sakamoto.

"We pride ourselves on ensuring that we pay meticulous attention to all the details and that we're able to satisfy each specific client's requirements, making sure that our manufacturing and packaging is optimal at all times. One of our greatest strengths is that we are able to take care of packaging needs for large-scale products, as well as extremely heavy products of up to 60 tons, with high precision and delicate packaging."

This dedication to *monozukuri* and putting the customer first has ensured the company's place as a pioneer in its field, with innovations such as its steel packaging solutions,



"One of our greatest strengths is that we are able to take care of packaging needs for large-scale and extremely heavyweight products with high precision and delicate packaging."

Mikio Sakamoto, President, Mabuchi Co., Ltd.



Steel packaging



Packaging container production



Wooden packaging



Mabuchi brand materials



Mabuchi Indonesia

which were a first for the Japanese market. "The reason why we focused on steel is that it can make the whole package much smaller than wood in terms of its cubic volume, without sacrificing its strength, and accordingly contributing to the cost reduction of logistics for our customers," adds Mr. Sakamoto.

Also ahead of the game in terms of digitalization, Mabuchi has embraced IT-related innovations such as automation, CRM (customer relationship management) and SFA (sales force automation) systems to enhance its processes and service



Mabuchi Thailand

offering. "By doing so, we are looking to systemize and digitalize in areas where we can make things more streamlined," Mr. Sakamoto reveals. "One of our recent developments in that realm is the Mabuchi Packaging Support System, 'MAPSS', which is a system that provides our factory workers with specifications of wooden and steel boxes designed for optimized packaging."

Having begun its first venture overseas in Singapore in 1978, today Mabuchi has bases in Thailand, Indonesia and Malaysia, where it works with many clients in the au-

tomotive industry. While Asia has been the focus of the company's international operations, Mr. Sakamoto has set his sights on expansion into Western countries, where he is confident Mabuchi's fusion of *monozukuri* and logistics could prove to be a hit on competitive markets like Europe and the U.S.

The company's overseas expansion has entailed the establishment of strong partnerships with local firms and, as such, Mabuchi is always seeking further partnerships as it pursues international growth, as well as M&A opportunities.

"When it comes to the expansion of the packaging and logistics business, I believe that M&As are incredibly important," explains Mr. Sakamoto. "If we could acquire a company that is dealing with a direct manufacturer of the materials or the logistics itself, then we can further expand and provide interesting products, such as packaging materials under our company brand and other types of developments where we can put our R&D skills to use to roll out our products."

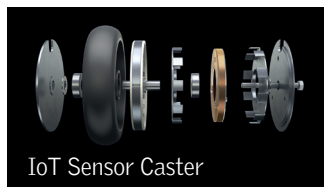
It has been 68 years since the company's founding, but 46 years since the rebranding to 'Mabuchi', which marked the beginning of the journey that has led the company to where it is today. As such, it is the upcoming 48th anniversary of this important rebranding that has served as the benchmark when it comes to mid-term goals and strategy setting.

"Our goal is to expand our sales back to pre-pandemic levels by the time we reach our 48th anniversary," Mr. Sakamoto states. "However, on a more personal note, I'm really concerned with the wellbeing and the prosperity of all the employees and their families. I hope Mabuchi is able to provide for those in its network in more than 50 years', and even 100 or 200 years' time, and to have an environment where the staff can work cheerfully and provide for their families, so that all the employees are proud of Mabuchi. To achieve that, I think a lot about what we need to do."

Steadily moving next-generation industries in the right direction

YUEI, a leading manufacturer of casters, is integrating original techniques into products which simplify the labor operations of diverse global corporations.

A stalwart of the Japanese caster industry with 45 years of experience, YUEI continues to go from strength to strength. The secret, according to company president, Kota Ojima, is simple: "We respond to each and every one of our customers' requests and have a deep understanding of their needs."



If that approach gives the firm a clear competitive advantage, then Japan's demographic situation is still creating headaches. Fully automating the manufacturing process is attractive but unrealistic. Instead, YUEI is looking to reduce



"Our strength is that we are able to customize our casters and other products to meet the exact needs of our clients."

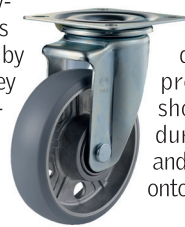
Kota Ojima,
President & CEO,
YUEI Co., Ltd.



the number of workers required for individual processes.

Mr. Ojima is adamant, however, that releasing engineers is not on the cards. Rather, by increasing production lines, they will become even more indispensable to the firm's output.

Either way, it's clear that exciting plans are afoot. The launch of the Ultimate Urethane Caster, for



example, promises to improve working conditions for laborers in the construction and automotive industries. Smoostar protects goods from shocks and vibrations during transportation, and will soon be followed onto the market by a caster equipped with an IoT sensor.



With an established market in China, Mr. Ojima is looking to expand the company's operations in Vietnam, where mesh pallets are already produced for the Vietnamese and Japanese markets. "In the future," Mr. Ojima states, "we would like to produce casters at our Vietnam factory so that we can expand caster sales in Southeast Asia."

And that is far from his only stated ambition. Having cornered a 25% share in the Japanese domestic market and more recently become the country's top caster maker, the next target for YUEI is to push sales to JPY 10 billion. And after that? "Become the number one caster maker in the world."



Kanaoka's new Reiwa Plant a "world-first" for water-based inkjet printing

The company aims to achieve overwhelming productivity gains through digital and AI technologies and an industry-leading 'decarbonized society' solution.



"We focus on potential issues and try to solve and mitigate them now."

Yoshinobu Kanaoka,
President,
Kanaoka Holdings Co., Ltd.

Kanaoka is one of the leading flexible packaging manufacturers in Japan. Having built its



Reiwa Plant

two state-of-the-art plants this century, the Saitama Plant 3 in 2006 and Kansai Plant in 2011, the company has just opened a new revolutionary facility: the Reiwa Plant.

"Reiwa Plant is the world's first commercial production plant for water-based inkjet printing," says Yoshinobu Kanaoka, President of Kanaoka Holdings. "The plant will enable us to achieve unparalleled productivity gains through digital and AI technologies and an industry-leading 'decarbonized society' solution through water-based inkjet printing."

For Reiwa Plant, the company is focusing on researching and developing more suitable printing methods and materials to help solve social issues such as plastic waste, carbon dioxide emissions and labor shortages.

The new plant will utilize digital and AI technology, including



Product samples

AMRs (Autonomous Mobile Robot) and an in-house developed 'Automatic Colour Matching System', with Kanaoka harboring ambitions to fully automate operations in the factory within a few years of opening.



Water-based inkjet printing press

"We are focusing on upgrading our inkjet printing press, which we aim to complete within three years," says Mr. Kanaoka. "With this upgraded model, we aim to store printing data in advance and link it to our AMRs. Flexible packaging manufacturing is significantly behind when it comes to automation. By combining our inkjet printing press with our 'Automatic Colour Matching System' and AMRs, the so-called Industry 4.0 can be achieved in flexible packaging manufacturing."



The bubble tech providing new eco solutions

Maruyama's latest novel invention – ultrafine bubble technology – is bringing sustainable solutions for the global food, water and environmental sanitation sectors.

Whilst approximately 70% of Maruyama's sales come from the agricultural machinery it manufactures for the domestic and global markets, the company also specializes in pump technology, with an estimated 80% of commercial car wash facilities in the U.S. alone using its patented water-saving pump equipment.

"Maruyama is contributing to society by providing products that are trusted, using our state-of-the-art pump and other technologies that help people use precious water resources more effectively," says Takaharu Uchiyama, President of Maruyama.



"We believe strongly in the importance of maintaining a harmonious relationship between people and the environment."

Takaharu Uchiyama,
President,
Maruyama Mfg. Co., Inc.



Large-scale agricultural sprayer

water-soluble cutting fluid (coolant) used in metal processing," says Mr. Uchiyama. "Our device instantly creates ultra-fine bubbles in the coolant, which has the effect of inhibiting deterioration caused by the growth of bacteria without the use of additives. We are working to commercialize this product for machine tool manufacturers and others who are striving to reduce their environmental impact."

The Maruyama president says the company's philosophy stems from its mission to make a difference in the lives of hard working people. "We also believe strongly in the importance of maintaining a harmonious relationship between people and the environment," he says. "Maruyama wholeheartedly takes on the challenge of developing and manufacturing products that not only support a stable food supply, but also achieve balance with the environment."

solutions for all these segments. "In pursuit of our vision, we used our pump technology in collaboration with another Japanese company to develop this ultrafine bubble technology," says Mr. Uchiyama.

The applications of this technology are very diverse. For example, it has been used in environmental sanitation, helping reduce the urine sediments in urinals. The product is also used in the preparation and washing of vegetables in the food sector, helping reduce the amount of chemical left on the produce, whilst reducing the amount of water needed in the washing process. The company is now also developing a prototype shower head that uses ultrafine bubbles, which it claims

can help alleviate dry skin and other skin-based ailments.

"We have also recently developed a device to extend the life of



Backpack blower



Carwasher

The company's main pillars are food, water and the environment, and its latest novel invention – ultrafine bubble technology – provides


MARUYAMA × MUFB

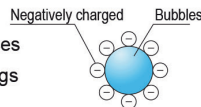
MUFB ULTRA PUMP

www.maruyama.co.jp/english

Characteristics of MUFB

Ultra Fine Bubbles generated by the MUFB Ultra Pump are so fine that they are invisible and can remain intact for several months.

- Excellent cleaning ability
- Penetrates into the smallest spaces
- Activates physiology of living things



The MUFB Ultra Pump generates highly concentrated Ultra Fine Bubbles instantly, unlike conventional methods of circulating water for a long period of time to generate high concentration.

The MUFB Ultra Pump can generate several million Ultra Fine Bubbles in 1ml of water.



100V Motor Type



UFB202M-DX

MUFB Ultra Pump



UP750

UP450

Lithium Battery Type



UFB202B-15

Water-soluble cutting fluid (coolant)





"My goal is to use the experiences I have gained to chart a new 100-year course for the company."

Masunao Ochiai,
President,
Ochiai Cutlery Mfg. Co., Ltd.

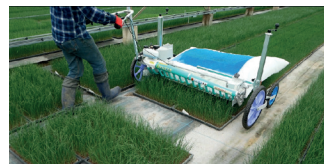
Ochiai Cutlery: Here's to the next 100 years

Ochiai Cutlery Manufacturing Company has been delivering high-end technology to its clients in the tea industry and beyond since 1919.

In the 100 or so years since it first introduced a manual tea picking shear to the market, industry giant Ochiai has been obliged to adapt to many challenges.

Perhaps that is why company president Masunao Ochiai remains bullish in the face of Japan's much-discussed demographic situation: "While it is true that the domestic

market is limited (due to the aging population), there are great opportunities overseas not only for tea, but also in other industries such as flower harvesting."



In fact, Mr. Ochiai argues that the biggest issue for the company is not the country's shrinking agricultural sector, but rather the move away from traditional engines.

Not that he is cowed by that either. With various zero emission products in development, Ochiai will launch its first battery-powered hedge trimmer in the near future, and it is hoped that existing collaborations with companies such as Yanmar, Yamabiko and Makita will go from strength to strength.

Overseas, Mr. Ochiai is looking to expand the company's presence in China, with India and Africa representing other potential target markets as urbanization in those countries increases. In Europe, meanwhile, there is "great potential for applications other than tea."

With a range of "advanced and complex manufacturing technology" at its fingertips, the key,



according to Mr. Ochiai, will be "pushing it to the forefront and marketing it."

OCHIAI
www.ochiai-1.co.jp/english

Kawasaki Kiko: Tea making for the ages



"We will continue to explore each and every possibility needed to respond to ever diversifying tea needs."

Yosuke Kawasaki,
President,
Kawasaki Kiko Co., Ltd.

Since its founding in 1905, Kawasaki Kiko has been one of the Japanese tea industry's major players. Specializing in the manufacture of unrefined tea processing equipment such as steamers and dryers, it also provides facilities for general tea production, including tea farm management machines.

Kawasaki Kiko's know-how has allowed it to provide tea processing machines used all over Japan, as well as being exported across the globe, for well over a century.



Tea processing plant

"All of this is part of a continual total effort to provide benefits for our customers through our products," says Yosuke Kawasaki, president of Kawasaki Kiko. "We will continue to explore each and every possibility needed to respond to ever diversifying tea needs, providing equipment that enables people around the world to produce tea they can drink with a feeling of safety and peace of mind, while also applying the principles of tea making created by our predecessors along with our own advanced knowledge and technology."

A dominant force domestically, Kawasaki Kiko has also

had a strong presence in China – the world's largest tea market – since the 1990s. Now the company is looking to expand its international presence and partnerships further afield. But what sets Kawasaki Kiko apart?



Tea analyzer

"It's not necessarily the quality of machines that we can provide, or what kind of proprietary technologies we can incorporate into the assembly of parts and components," says Mr. Kawasaki. "It's more the thought that goes behind why we need to apply these kinds of specific processes, or what



Riding-type tea harvester

kind of machine would be ideal for each step in production. It's that drive that gives us our competitive edge."

Such know-how has enabled Kawasaki Kiko to provide tea processing machines used all over Japan, as well as being exported all across the globe, for over a century. "I believe that this kind of competitive edge and know-how can be seen as a huge upside when dealing with new partners," says Mr. Kawasaki.

KAWASAKI KIKO CO., LTD.
www.kawasaki-kiko.co.jp/eng