

High-mix, low-volume: Japanese *monozukuri* prevails in competitive global landscape

The 'Made in Japan' brand has long been synonymous with high quality. And behind the superior Japanese quality that Nippon manufacturers offer is the *monozukuri* philosophy, which focuses on craftsmanship, attention to detail and the constant pursuit of innovation to meet client, market and societal demands. And while Japan has faced stiffer competition in recent decades from regional competitors that have surpassed it in mass production markets, Japanese companies still dominate when it comes to high-mix-low-volume manufacturing and niche B2B fields where *monozukuri* quality still prevails.

"In terms of price, we cannot, as a Japanese company, compete directly in the arena of mass production, but the Chinese weakness is that they have to mass produce or else they cannot have a return on investment from the facility," says Masuya Mori, President of Sanden Retail Systems, a manufacturer of

commercial cooling and heating systems. "Japanese companies have shifted themselves to high-mix-low-volume manufacturing. That is the only way to compete with Chinese mass production. I believe one of the means for Japanese companies to survive and compete against the Chinese mass production is to have high-mix-low-volume, high-quality, value-added products."

Monozukuri is indeed key to this endeavor. Giving his take on the *monozukuri* concept, Ryukichi Sato, President of Enuma Chain, says: "There are two types of *monozukuri* in our opinion: one is for major manufacturers, and the other is for end-users who use our products. We are a manufacturer of industrial and motorcycle chains, and we supply them to a great many major manufacturers, including Kawasaki, Kubota, Toyota Industries and Is-eki. In terms of our manufacturing, we believe that our *monozukuri* is to provide the highest quality

while meeting the demands of each manufacturer and being nurtured by the manufacturer."

Fine-tuning is another *monozukuri* concept when it comes to the pursuit of the highest quality, as highlighted by Yasuhiko Isobe, President of Mutoh Holdings, a manufacturer of inkjet printers. "The technology we possess is able to make very fine adjustments. We are able to combine the strengths of Japanese chemical manufacturing with the strengths of Japanese electronics and mechanical expertise. These elements need to be finely tuned in order to bring out the best features of a large-scale, large-format printer," he says. "I personally feel this ability to fine tune has become the core competency of Japanese *monozukuri* and the reason Japan will remain a leading power."

To consolidate its *monozukuri* competencies, Moripax, which specializes in plastic trays for the



Masuya Mori,
President, Sanden Retail Systems

logistics industry, established its Technovation Center in 2021. "The Technovation Center is the core site for our *monozukuri* where all key functions for one-stop *monozukuri* are gathered (planning, design, mock-ups, mass-production prototype, QA)," explains president Yuko Sumida. "Once a customer approves a prototype, we can then move on to mass production. QA follows, and then finally we can deliver the product to the end user. Our group can offer a one-stop shop for packaging needs. That is why I say 'total packaging' is a core strength."

Integrated systems facilitating manufacturing automation



"We find joy and satisfaction in solving our customer's problems. It has led us to invent dedicated peripheral equipment for a wide variety of workpieces."

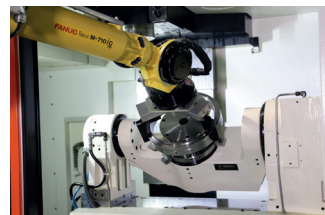
Kaname Matsumoto,
President, Matsumoto
Machine Co., Ltd.

When it comes to factory machinery and automation solutions, Japan still rules the roost thanks to small, agile and innovative companies like Matsumoto Machine, which supplies chucking solutions, rotating solutions, holding solutions, special parts, ele-

ment parts, and system integration to its manufacturing clients.

With expertise in machine tool peripheral equipment specialized in chucking, rotating, and holding technologies, Matsumoto Machine offers its clients integrated solutions to improve factory productivity and efficiency.

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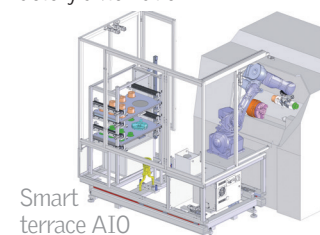


Autotilting rotary table

In 1948, Eiichi Matsumoto established the company with a mission to increase productivity and enterprise value for its clients. Seventy-five years on and that mission still guides Matsumoto Machine and current president Kaname Matsumoto, with the company at the forefront of developing factory automation and robotics solutions for Japanese companies facing an ever-increasing shortage of human operators due to the nation's aging population.

"Production line efficiency and robot utilization are the main business

for us right now. By analyzing the functions of automation in manufacturing, new ideas can spring forth," says Mr. Matsumoto. "Matsumoto Machine already has a proven track record for system integration for customers' existing production lines. In the future, I see an escalation in this segment and we are looking positively at system integration and factory automation."

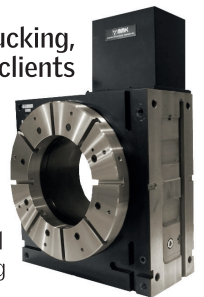


Smart
terrace AIO

Among the latest solutions developed by Matsumoto Machine are ROBO-QJC, an automatic chuck jaw replacement system, and Smart Terrace AIO, a one-stop solution that makes use of the company's extensive experience and for which

Mr. Matsumoto sees applications for clients in several industries. "It is used in the metal machine processing industry, however, I would say that we are looking to diversify that and the equipment can be utilized in a number of different applications."

In terms of global expansion efforts, Matsumoto Machine has grown its customer base in the U.S. since it established a presence there in 1989, and aims to find more international partners that can support its ambitions to bring Japanese *monozukuri* (manufacturing craftsmanship) to more clients around the world.



Big bore
rotary table



mmkchuck.com/en

Teikoku ready to provide next-gen pumping globally

Teikoku Electric provides fully customizable canned motor pumps for a range of industries.

“When we take on a client, we hand-make each unit.”

Yoshihiro Koroyasu,
President & CEO,
Teikoku Electric
Mfg. Co., Ltd.



Japan excels when it comes to niche B2B manufacturing markets, where small, agile and innovative Japanese



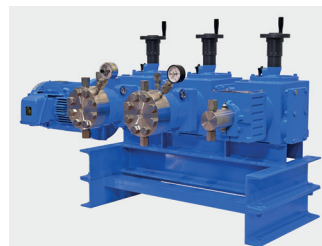
Head office

SMEs can offer clients high-mix, low-volume customized products. Since these markets are small, larger players normally stay away, as highlighted by Yoshihiro Koroyasu, president of canned water pump manufacturer Teikoku Electric, whose products are used in several industries such as fine chemicals, petrochemicals, pharmaceuticals, power generation and food.

With over 50 years in the business and a proven track record worldwide, Teikoku Electric provides canned motor pumps that are fully customizable in order to meet the often complex requirements of its customers.



API685 Canned Motor Pump



Metering Pump

“Most of our clients are in the chemical industry, and their demands are not only hard to satisfy, but also diverse in nature. Often they will ask us for products that can meet American standards. Large companies do not really want to meet these demands as they find them too niche and too customized to individual clients’ needs,” Mr. Koroyasu says. “That is why when we take on a client, we hand-make each unit. We are operating on the complete opposite end of standardization. Large companies simply cannot address these kinds of highly complicated requests, and we find our clients are very happy with our customized approach.”

These days, client and industry demands are indeed largely influenced by green policies. Mitsubishi Heavy Industries, for example, has introduced an initiative involving the mixing of ammonia with coal to produce power while reducing the amount of coal. “We as a company have many years of experience in pump production, so we want them to use our pumps

in their process. Specifically, we mean the pumps used to supply ammonia,” adds Mr. Koroyasu.

Teikoku Electric’s clients can also use its pumps in biomass power generation as well as offshore wind power and in the transportation of ammonia for hydrogen power. As such, Mr. Koroyasu hopes to see his company play a bigger part in the green energy revolution in the coming years.

“Unfortunately, being an SME, we are only able to acquire a tiny part of the market share for the power industry, but I am hoping that the mix of ammonia and coal that I mentioned earlier starts to take



Head office factory

“When liquid or water enters our competitor’s products, it has direct contact with the motor, and thus their motors have a short life expectancy. For maintenance, the clients need to replace the motor itself, which is significant in terms of cost. Our products are canned, so access to the motor is blocked, especially for liquids like water,” the president explains. “The life expectancy of our motors is much longer than our competitors. I would say



Canned Motor Pump standard type cutaway model

off so that we may capture a larger share of the market with our pumps. This business is an entry point for us to establish a large presence in the power industry. Biomass energy and wind power are also key points for the future of the power industry, so I can see these also becoming entry points for our company.”

One particular product that has great potential in the power industry is the company’s Type BP Vertical Boiler Circulation Pump, which can upgrade and replace wet stator-type boiler circulation pumps used in power generation stations. A major advantage is the fact that the pump requires little to no maintenance, a process that is costly and time-consuming for many clients.

that our competitor’s wet motor pumps have a life expectancy of around five years, however, our canned motor pumps can expect a lifespan of around 10 years or more. That is double the amount of our competitors, and that cost saving is appreciated by our clients.”

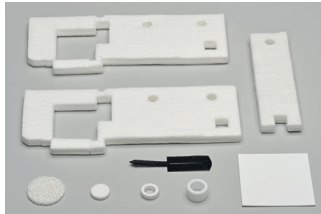
As the company looks to grow internationally, Australia, China, the U.S. and India hold the most potential for Teikoku Electric, which already has seven overseas sites. Mr. Koroyasu adds: “We want to enhance production and service businesses at these sites as each still has extra room for growth.”



www.teikokudenki.co.jp/english

Swacoo to develop high-precision materials for EVs

Swacoo aims to leverage its technological capabilities as a manufacturer of materials for electronic devices to attract customers for in-demand components for next-generation electric and self-driving vehicles.



Parts for office equipment

Swacoo has had its finger on the pulse of change since its establishment in 1971, providing high-precision processed parts and materials for a range of electronic devices.

In the 2000s, with the spread of mobile phones and smartphones, Swacoo acquired production capacity and quality control know-how by supplying LCD backlight parts and OCA for displays for major companies. These partnerships helped Swacoo to significantly im-

prove its production techniques and quality control.

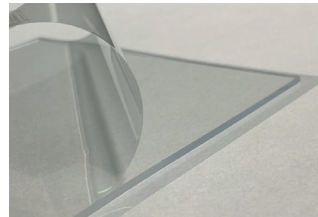
Having built up its excellent technological know-how over the years developing parts and materials for office printers, lithium-ion batteries (LiBs) for electronic devices, and camera lenses for digital cameras and cellphones, the company today continues to work with smartphone



Optical film for large displays

makers and Japanese device, module, and materials manufacturers, while also shifting its focus to elec-

tric vehicles (EVs). Company president Kazuaki Ikegamii sees major



OCA for displays

opportunities for business growth through two main strategies: low-cost processing technology for parts for EV LiBs; and patented optical film technology for large electronic displays in said vehicles.

"Our strategy is to find new businesses and develop new products together with device/module manufacturers and raw material manufacturers, and there are great



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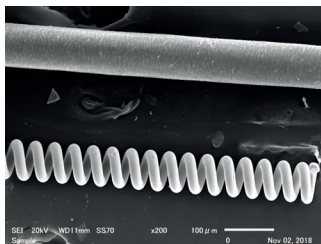
Kazuaki Ikegamii, President, Swacoo Co., Ltd.

business opportunities when innovation occurs," he explains. "By having a tight-knit relationship with these providers and presenting them with Swacoo's technology, know-how, and capabilities, we want to continue moving forward and finding new markets globally."



The finest quality for the highest precision springs

Mikuro Spring is a leading spring manufacturer and a pioneer in this field that is now searching for new opportunities in sophisticated industries.



Spring and human hair

When it comes to being a pioneer in the field, look no further than Mikuro Spring, a leading spring processing manufacturer founded in the 1950s. Society has moved on a lot in that time and with it so too has the company, deploying its products successfully in a variety of applications worldwide — including electrical and medical devices, and automotive parts — pulling on joint efforts to achieve its success.

"We do not only rely on our own strength," explains company president Takuya Kojima, high-



"We want to become a leading company in spring solutions for the semiconductor testing industry."

Takuya Kojima, President, Mikuro Spring Co., Ltd.

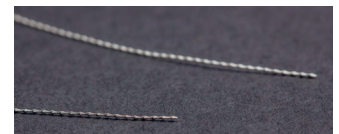
lighting the world's smallest super-fine springs his company produces. "We also rely on the mutual efforts of our suppliers. We are blessed that we have such good surroundings with a number of companies that complement our technology. It is a combination of

many things, with many stages, to reach our level of excellence."

More collaboration is desired, says Mr. Kojima, particularly with overseas partners.

"We want to expand to the U.S. and Europe by setting up an R&D center to promote our unique

technologies and micro spring manufacturing techniques, working with local companies



Wavy spring

with similar ideas and establishing partnerships through M&A activities. We know this is challenging and timing is crucial."

With a new plant being built to double the capacity, the outlook for the coming years is bright.

"Our main goal right now is to become a leading global company and I would like to achieve that in the next five years," says Mr. Kojima. "We want to introduce more of our products and technologies to the world."





"Specialized areas require high quality and uniqueness which further inspires our development skills."

Hiromi Ishizuka,
Representative Director,
Tomei Diamond Corporation



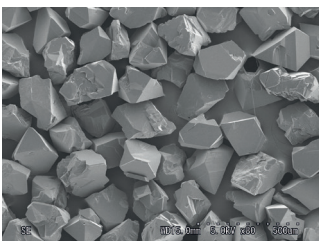
Tomei Plant
in Tochigi, Japan

Nano-level precision reaching the diamond standard

When it comes to the processing of diamond powders for polishing, grinding and cutting, Tomei Diamond Corporation sets the standards on which clients in the automotive, construction and semiconductor industries depend.

Since pioneering the production of artificial diamonds for industrial use in 1961, Tomei Diamond Corporation (TDC) has excelled in the processing of diamonds for polishing, grinding and cutting. The company's ultra-precision materials are indispensable to manufacturers in the semiconductor, automotive and construction industries, who highly value TDC's ability to provide material of consistent quality and shape that ensures precision down to the nanometer and micron level.

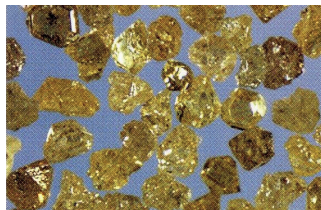
Over the years, TDC has developed a variety of materials, including PCD for non-ferrous metal cutting tools, cBN powder for grinding abrasives for ferrous metals, PcBN for cutting tools for ferrous metals, and boron-doped CVD diamonds for use as an electrode material.



ISBN-V

"We have focused on the research and development of industrial synthetic diamonds, especially micron and nanodiamond powders, and have built up a reputable position in the precision field," states TDC representative director Hiromi Ishizuka. "Another strength we have is that we

have our own unique development and improvement capabilities. Our diamond powders have sharp edges, or as we call them angular acute edges, which makes them serve multiple high-end purposes. Our production may take longer compared to other companies, but we ensure that the shape and size is the most appropriate for diamond powders."



TED-2

In the case of the semiconductor industry, applications for diamond powders include tools used for grinding ingot periphery, diamond wire saws, wafer-edge chamfering, back grinding and dicing. In the case of SiC (silicon carbide) semiconductors, diamond powder is sometimes used for wafer polishing itself, so it is expected that the use of diamond powder will further increase in the SiC era.

"Our main target is semiconductors since this industry has a limited number of players. We have been collaborating with many of the major Japanese players in this industry," adds Ms. Ishizuka. "From this point, we also aim to expand and collaborate with overseas companies. Our products are used

for cutting silicon material, but we are now focusing on the next generation of semiconductor material, silicon carbide, to which we are providing a new type of solution for cutting, grinding and polishing."

Indeed partnership and collaboration will be key to TDC's success, with the company working with peers as well as customers to enhance product development. As each customer has different toolmaking know-how, TDC works in partnership to provide abrasive grains tailored to the customer's specific products, and through trial and error, products with superior performance are developed as a result.

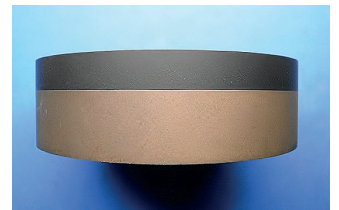


cBN Cup
Type Wheel

Regarding application research in the field of ultra-high pressure, TDC is looking for partners who want to use its ultra-high pressure facilities for research and development. "We do this because the development of new products in the field of ultra-high pressure means that we can expand the market in which we can operate," Ms. Ishizuka explains. "We receive various inquiries from public and private research institutes and private com-

panies, and provide total support until development is realized and the product is commercialized."

With 90% of its sales coming from the domestic market, TDC aims to grow its presence globally, with the company establishing an office in Georgetown, Kentucky in 2022 to support its expansion in the U.S. semiconductor market.



PCD Special Type

"When we did a global search, we discovered that the U.S. has the most flourishing semiconductor industry. Considering that the national government is leading the advancement in the semiconductor industry, we decided to have our base in the U.S.," the TDC director reveals. "We feel the importance of the international market, and we are aware that we should focus more on growing our overseas bases and have a bigger international sales ratio."



www.tomeidiamond.co.jp/en

Fittings firm TAKIGEN out to contribute to the EV revolution

A manufacturer with expertise in products such as handles, locks and hinges, TAKIGEN is now looking to apply its know-how to fittings for electric-vehicle chargers.



Standard EV charger Lock

Since TAKIGEN was founded in 1910, it has established itself as a leading manufacturer of industrial fittings.

The extensive range of approximately 8,000 types of sealing fittings – handles, locks, hinges, etc. – are professionally manufactured for customers in a wide range of industries.

Customer feedback is key to product development at TAKIGEN, whose quality commitment is typical of manufacturing in

Japan. While competitors elsewhere in Asia may offer lower prices, can they provide the same dependability?

"Japan is unique for its quality control," President Mitsugu Tanaka says. "Not only in terms of functionality and appearance, but also the materials we use."

"Companies in China and Korea have been able to copy products like ours, but our customers continue to purchase our products because, even though they may be more costly, they are defect free and safer."

TAKIGEN's clients hail from sectors such as heavy electrical machinery and semiconductor manufacturing – as well as the automotive



Quick EV charger lock

industry, for which the company now produces fittings for electric-vehicle (EV) charging stations.

"We have been making a holder for the charging gun for the past eight years," Mr. Tanaka says. "When it comes to charging stations, we are behind in Japan compared to Europe, but this equipment will be increasingly installed here."

Takigen is working on EV-related products because they require



Make new products with TAKIGEN create



"We really take good aftercare of the customers after we release the product, so that our customers feel safe in our hands."

Mitsugu Tanaka, President, TAKIGEN MFG. CO., LTD.

functions that have never been available before. The company is developing new fittings in areas such as solar power generation, rechargeable batteries and robotics.

"If we don't have a keyword for something, we create it," Mr. Tanaka says. "Through our research, we aim to develop good products that will be suitable for that market."

TAKIGEN

www.takigen.com

JASCO: the surface treatment specialists

Since its foundation in 1968, JASCO has continued to support the development of environmentally-friendly plating.



"We are proud that our high quality and track record of zinc plating-related agents, the mainstay of anti-corrosion technology today, are among the best in the industry."

Shigeyoshi Wada, President, Nippon Hyomen Kagaku

A firm that regards itself as a B2C company, in the last half century JASCO has established an international reputation as a surface treatment specialist.

According to company president Shigeyoshi Wada, however,

what really sets JASCO apart is its "unique" after-sales follow-up services: "Our business is not just selling products. We take care of our customers and users moving forward to ensure that we can address any challenges or issues related to our products."



And with the majority of the company's clients coming from the automotive and electronic sectors, seismic changes are afoot.

While stressing a desire to keep one step ahead of competitors, Mr. Wada also emphasizes the importance of continuity. The shift to electric vehicles (EVs), he says, will not eliminate metal from cars, and

metal requires surface treatment.

For OEMs manufacturing engine vehicles, therefore, JASCO remains a pivotal link. Mr. Wada adds: "Our company can meet various requests by providing one-stop services. We might be a small group, but we have a long history and have accumulated significant expertise over the years" – expertise which OEMs specializing in the development of engine vehicles necessarily lack.



50th anniversary logo

Looking to the future, JASCO will continue to target Japanese manufacturers, particularly those working abroad, providing surface treatments which local competitors cannot match in terms of quality. "In many cases," Mr. Wada

explains, "these local companies cannot satisfy regulations from U.S. and European companies," a state of affairs which has led to JASCO significantly expanding its U.S. and European customer base.



JASCO'S anti-corrosion technology in use

And with the company soon to celebrate its 60th anniversary, Mr. Wada has no doubt that JASCO's customer base remains key.

"As surface treatment professionals," he concludes, "we believe that increasing customer convenience will lead to growth."

ALL OVER THE METAL
JASCO

www.jasco-kk.co.jp/english

Taiyo Fastener: crafting cost-effective, quality and sustainable connections through *hitozukuri*

Taiyo Fastener is leveraging technology and sustainability to drive innovation across its supply chain with a clear understanding of the investment in employee, partner and societal happiness.

Taiyo Fastener, founded in 1972, has been manufacturing high-quality fasteners for over 35 years in Japan. President Kenji Mabuchi shares how the company practices *monozukuri*, which has evolved into a modern manufacturing philosophy focused on quality, cost, and delivery (QCD) and grew from the craftsmen brought in at the beginning.



"Our management philosophy is: promote happiness, both economically and that of our employees; contribute to the prosperity of our business partners; and contribute to the development and happiness of society."

Kenji Mabuchi, President, Taiyo Fastener



"I believe that *monozukuri* is *hitozukuri*, making things is making people," the president says. "Since we want to pass down the technologies that were brought by these engineers, we tried to put them into a written format, known as Taiyo Fastener's philosophy."

The company's automation of production lines, focus on employees' health, and the adoption of new technologies have allowed it to adapt to the changes brought by Japan's aging population.

"Automation enables us to do the production process with fewer people. Our oldest employee is 76 years old, but he is still healthy and working so actively," the president reveals. "Although our official retirement age is 60, we have a system that allows our employees to continue working later. Breaking from our male tradition, we have recently been actively hiring young women as operators for the production line, so that they will be able to use the machines."

The arrival of COVID-19 proved to be an important time for the company, with positive actions being under-

taken despite a slight decline in revenue.

"We were able to provide employees with educational training to nurture the next generation of leaders, and management strategy training to deepen the thinking of executive candidates," says Mr. Mabuchi. "In addition, we launched a new product development project, fostered awareness of taking on new challenges, and created a foundation for cultivating a spirit of challenge, creating a new flow for our company.

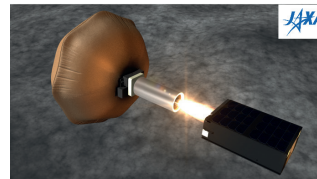


"It's taking shape and I hope that we can continue this and build a strong corporate entity as a company."

Returning to the theme of quality, the president highlights a key difference with Taiyo Fastener.

"Manufacturers in China and Taiwan pick out and get rid of

defective products after mass production. In our case, we try not to send defective elements to the next step during the production process. We only take the good ones to the next phase and this avoids producing defective products, which controls the quality."



The need to continually innovate to keep pace with industry developments is clear and Taiyo launched a new product, the Kapal Bolt, which is cost-effective, sustainable, and saves on labor.

"We try to approach and listen to the needs or problems of companies that could be our potential customers so that we can deliver their requirements to the production line," explains Mr. Mabuchi. "We focused on the labor cost compared to the cost of the fasteners themselves. Even though the labor cost in China and Southeast Asia is still low, it has recently risen. We thought that we should concentrate on how to shorten the labor time for the workforce and the Kapal Bolt does that."

For this development, collaboration with other businesses is seen to have a significant role.

"In the domestic market, we have a lot of friends and partners, and overseas we have a good joint venture in Thailand," says the president. "We are trying to produce products through that company and export them to Europe and the US. Listening to the customers in those markets also helps in the expansion of our products in Japan and Thailand.

"We have some friends in Indonesia with whom we can collaborate on development. We would like to continue this kind of relationship and internationally we are looking at Asian countries, especially Indonesia and Vietnam."

"We do pay attention to SDGs and product development earmarks sustainable longevity and environmentally friendly materials. We manufacture titanium screws, for example. Titanium is a material that can achieve corrosion resistance, strength, and weight reduction. Our other screws are also used in JAXA's unmanned lunar probe 'OMOTENASHI'.



With clear management philosophies of promoting happiness and prosperity to employees, partners and society as a whole, Mr. Mabuchi is devoted to them being achieved before he steps away as president. "We support people all over the world with unlimited possibilities. 'Always by you' is our watchword."

Game-changing digital press solutions

For both digital and conventional presses, providing sustainable solutions is Miyakoshi's specialty. This unique machine builder in Japan has made inroads into the global flexible packaging and labels market.



Packaging example of MJP30AXF

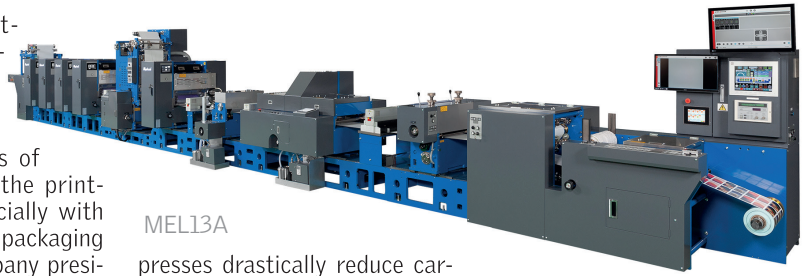
Innovation often involves taking a traditional industry and revamping it for the modern age. One of the companies pushing its sector forwards with its holistic approach is Japanese printing machinery firm Miyakoshi Printing Machinery.



Printing in Japan dates back centuries and the country was the first in Asia to adopt the Gutenberg press. Miyakoshi, founded in 1946, taps into the industry's tradition of *monozukuri* with its machinery for printing and post-printing processes. The company was Japan's first to develop digital inkjet printers and it has continued this forward-thinking approach with its custom-made label printing presses that come equipped

in line with post-printing processing, along with its data printing solutions.

Sustainability is of great concern in the printing industry, especially with labels and flexible packaging printing, and company president Toru Miyakoshi reveals his firm is focusing on providing eco-friendly solutions. Miyakoshi is developing presses based on water-based ink and drying technologies such as its MJP30AXF inkjet printer for flexible packaging. These water-based ink



MEL13A

presses drastically reduce carbon emissions.

The company is also embracing the AI revolution with its "Yalless AI" system and offset label press MLP13M. As Mr. Miyakoshi details: "This system assists inexperienced operators to sustain good print

quality and at the same time reduces label stock wastage by more than 30%." Miyakoshi's growth has enabled it to create a European subsidiary based in Spain, and the two arms of the company worked together to develop its compact and cost-effective MEL13A label printing machine. By producing 80 percent of its mechanical parts in-house, Miyakoshi both reduces costs and ensures quality.

The company is targeting further growth in Europe and China, with an eye on potential development in Southeast Asia, but Mr. Miyakoshi stressed that expansion must be made with a guarantee that quality standards can be maintained.



MJP30AXF



<https://miyakoshi.co.jp/english>

Hikari Dendoki: trading firm supports Japan's key semiconductor players



Toshihiro Nakao, President, Hikari Dendoki Co., Ltd.

As a trading company specializing in production goods for customers such as semiconductors and electronics,

Hikari Dendoki provides products and services to some of the biggest Japanese companies in the industry.

With partnerships with the likes of ROHM, Tokyo Electron, Oriental Motor, NSK and IAI, Hikari Dendoki gathers top-level market information so that it can make the best proposals to its clients to ensure the selection of the optimal combination.

"I think that is one of our greatest strengths," says president Toshihiro Nakao. "We gather information about technological innovation

and with that knowledge we make proposals that contribute to the customers' *monozukuri*."

An acute understanding of customer needs is also a key facet of Hikari Dendoki's success, with the company providing technical training to its sales reps on all relevant areas, such as mechanics, motion control, and networking, before deploying them to deal with clients face-to-face and learn about their specific requirements.

Mr. Nakao adds: "We work quickly to match customer needs and

give the best advice on products, like which is the cheapest, the fastest delivery time, the smallest, the best combination, we give them as much information as they need."



HIKARI DENDOKI Co., Ltd. contributes to the manufacturing industry through face-to-face sales, and continues to shine for the benefit of people and society.

Quality and precision: the Mutoh Way

Founded in 1952, Mutoh Holdings has established itself as a world leader in large-format inkjet printers.



"Mutoh promotes the development of original technology, expertise and design quality, and establishes production systems that are able to flexibly and quickly respond to user needs."

Yasuhiko Isobe, President,
Mutoh Holdings Co., Ltd.

A company that crafts high-quality, high-precision products, Mutoh Holdings specializes in large-format inkjet printers, following the Japanese principle of *monozukuri* – the pursuit of perfection in manufacturing. For customers in Japan and around the world, the Tokyo-based firm is also a trusted provider of printer supplies and maintenance, 3D printers, design and measurement devices, and IT solutions.



Head office

"Mutoh Industry was established upon the development of the Drafter®, which is a drafting board used for designing," says the company's president, Yasuhiko Isobe. "That was 70 years ago, and all our growth since then has led to what we



are today – a hardware and software manufacturer with a primary product that integrates a range of different technologies. Our large-format printers can adapt to any type of ink."

In Mr. Isobe's view, *monozukuri* comes down to Japanese manufacturers' devotion to honing their products. "For things like printers, the technology needs to be precise without leeway," he explains. "Let's say our large-format printers take 10 hours to make. Five of those hours are required for assembly, so you might ask what we do with the remaining five. We spend that time fine-tuning and checking."

While Mutoh has established overseas locations in Europe, the United States and Australia, its commitment to a meticulous manufacturing process means its factories have remained on home soil. "Our production requires the kind of engineering expertise that can only be found in Japan," Mr. Isobe says.

Mutoh is dedicated to ensuring that its products contribute to a greener future. The use of eco-friendly inks is key to this drive, starting with the switch from solvent ink to eco-solvents. "Solvent ink isn't environmentally friendly," Mr. Isobe says. "It contains volatile organic compounds and when they dry out, a chemical vapor is emitted. It's been the preferred choice, especially for large signs and displays, because it's highly resistant to sunlight. However, ink with the same performance now exists in an eco-friendly form.

"Another new type of ink we're focusing on is UV ink; it dries up and stabilizes im-

mediately after printing using UV light, so it's considered eco-friendly. However, it doesn't have a strong resistance against sunlight, so we have yet to utilize it for printing signage. There's also water-based ink that's very eco-friendly, but there's a limited



XPJ-1462UF

amount of media that it can be printed on. Normal paper is fine, but magazine paper that has a sheen doesn't absorb the ink, so it's not printable on this kind of media."

Among the newest printers to come off Mutoh's production line is the XPJ-1462UF, the industry's first ever medium-sized UV flatbed. "The plan for the next two to three years is to transition to mostly eco-friendly inks," Mr. Isobe concludes.



MF-900

The company's latest products also reflect the rise of 3D printers. For example, the new Value 3D Magix MF-900 is able to model carbon fiber-containing materials – a capability that's highly sought

after by customers wishing to create prototypes for jigs and parts.

"As of today, we consider 3D printing to be booming, even if business-wise it's yet to be that lucrative," Mr. Isobe says. "In fact, we act as an agent for an American large-scale 3D printing company. For now, the use of 3D printers is confined to making models or mockups, and as a 3D printer dealer we have incorporated their use, but that use is limited to the production of parts that require less sophistication. In terms of 3D printers, our focus is not on large-scale and is more directed to mid-to-small-scale printers."

Among the IT products developed by Mutoh, there are a range of CAD tools, as well as the firm's state-of-the-art VerteLith RIP software, which offers users complete control over the printing process – from workflow optimization, to color and layout management, to job preview functions. What's more, customers can also subscribe to Mutoh Club, an exclusive web service that provides news and release information, allows you to check your printer's status remotely with the Mutoh Status Monitor, and makes the latest manuals and printer drivers available for download.

When it comes to international business, Mutoh doesn't plan to branch out from the three overseas regions in which it is already present, Mr. Isobe says: "Our emphasis right now is on North America, Europe and Australia. The reason we're focused on developed nations is that we provide not only printers, but also ink. If we sell in Asia to countries like China, they tend to only purchase the printer and not the ink. They want to cut costs and therefore use cheaper, inferior ink. That business style is not desirable for us."

MUTOH
www.mutoh-hd.co.jp/en

For King Printing, the power of printing is strong minded people

King Printing has been providing tailored printing solutions since its foundation in 1917.



Window display

For more than a century, King Printing has provided the printing industry with its special materials and unique know-how.

With high-quality, large-format inkjet printing and precise color tuning, allied to a company structure that prioritizes



Reproduction of cultural properties



"We believe in the power of visual communication to create a more enjoyable and beautiful world."

Yuki Mitsuhiro, President, King Printing Co., Ltd.

client satisfaction, the firm is now looking to consolidate its presence in the overseas market.

The secret to King Printing's success, however, according to company president Yuki Mitsuhiro, is its highly skilled employees. "Ultimately, people, rather than systems, contribute to products, so I'm focusing on educating people and foster-



High-speed UV inkjet printer

ing our organization in order to maintain high standards."

Having entered the Taiwanese market in 2011, the company is planning the next steps in its international development. Mr. Mitsuhiro adds: "We plan to enter a South-east Asian country this year, and aim to expand our business to four more countries by 2030."

Ultimately, the aim is to



Outdoor ads

establish strong links between the company's domestic and overseas branches so that facilities, equipment and materials are better aligned. "By doing so, it will enable us to provide the same high-quality products and services anywhere in the world."

King Printing will challenge the care and sensitivity with which Japanese companies develop their products so that they can be replicated on a global level.



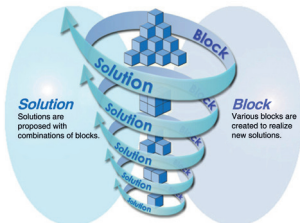
www.kingprinting.co.jp

The block-building system for the future

Staying true to its BBS concept, NKE Corporation produces high-performance factory devices.

The thousands of individual parts which make up complex manufacturing systems are the building blocks of companies around the world. Japanese firm NKE has built its success through the creation of a system to seamlessly merge these individual blocks into tailor-made solutions for its customers.

Our solutions create new blocks, and combinations of the blocks create new solutions.



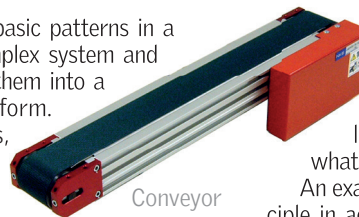
BBS concept

Founded in 1968, NKE's expertise is in factory automation devices and components. However, the company's true added value comes from its Block Building System (BBS) concept. This system develops "blocks" by identifying predictable, stable,

and common basic patterns in a seemingly complex system and standardizing them into a reproducible form.

These blocks, such as cylinders, conveyors, and air grippers, become NKE's "standard units" with a high degree of performance and reliability. The blocks are then used to create modular solutions and equipment for customers, lowering costs and increasing profitability. The BBS approach standardizes the response to any variable, ensuring a logical, coherent, and reproducible operational process.

NKE places its focus on the details of the *monozukuri* process to identify each customer's needs, and has people at the heart of its "Humanized Automation" principle, which has been key to the company's expansion into fields such as nursing and agriculture. Company president Michikazu Nakamura explains that humanized automation



Conveyor

seeks to "leave only meaningful tasks to human beings and let machines do what machines can do". An example of this principle in action is the company's Airsapo back brace, which contains an artificial muscle built using the BBS concept and increases the wearer's physical mobility.



Airsapo

The innovative ideas NKE provides come from the freedom



"Our engineers have a passion to contribute to society and solve social problems using the technology they have."

Michikazu Nakamura, President, NKE Corporation

given to the company's engineers and their passion for *monozukuri*. The company has expanded into China, Thailand and Vietnam, and Mr. Nakamura says NKE is always on the lookout for opportunities to grow in other countries where it can learn from the local market.

NKE株式会社
www.nke.co.jp



"We have applications for our technology in the automotive, medical, and even the semiconductor industry."

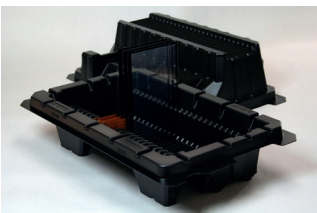
Yuko Sumida, President, Moripax Co., Ltd.

Moripax aims to change the future of logistics with total packaging solutions

Playing a hidden but indispensable role behind the scenes, Moripax aims to change the future of logistics through its innovation, while also becoming a key supporter of a sustainable circular economy.

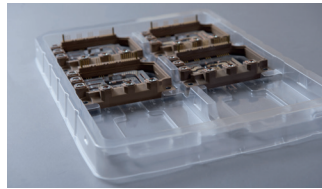
Supporting its B2B clients, Moripax specializes in the supply of plastic trays – niche products that are essential in several industries.

Two companies fall under the group's umbrella: Moripax and Morioka – the former a trading company established in 1979, and the latter a manufacturing firm established in 1959. Having expertise as both a trader and manufacturer has been key to the group's success. "Another core strength of our company is the total packaging we offer to our clients, as well as the design and plans we can create for clients in our Technovation Center," adds president Yuko Sumida.



Tray for thin-glass

Ms. Sumida is one of the few female presidents in Japan's still largely male-dominated executive world, having taken over in 2019 following the sudden and tragic death of her father, the



Tray for parts

former president, who oversaw the development of the company's thermoforming method and expansion into several industries.

"Thermoforming as you know is a huge industrial sector, yet niche at the same time. It is essential, yet there are many different players with specific needs and applications," she says.

"My father saw an opportunity to expand our thermoforming capabilities to other fields beyond pure packaging. Now we have applications for our technology in the automotive, medical, and even the semiconductor industry."

The loss of her father marked a big turning point for the company, with Ms. Sumida's biggest achievement thus far being the establishment of the Technovation Center, which is representative of the company's goal of changing the future of logistics,

and a fulfillment of an idea started by her predecessor. "We lost him, so as his daughter, I wanted to be the one that brought his dream into reality."

"The Technovation Center is the core site for our 'monozukuri' where all key functions are gathered (planning, design, mock-ups, mass-production prototype, QA). Before, these functions were scattered in different factories, causing longer lead times, information was misled and quality was not stable, along with other effects.



Sewing goods

After combining these functions together, our possibilities and capability of 'monozukuri' has been broadened and we are able to work more closely with our clients to meet their packaging needs by offering a one-stop shop for packaging solutions. That is why I said 'total packaging' is a core strength," she explains.



QA tools

Collaboration is also key to the company's product development. Ms. Sumida highlights the importance of *nakama* (comrades) throughout Moripax's history, and the Japanese enterprise – which already has operations in Hong Kong and China – aims to gain more global partners as it expands its international operations.

As a plastic-related enterprise, environmental concerns are an inevitable issue for Moripax. Partnerships, both domestic and international, will also be key for the company when it comes to its ambitions in supporting green and sustainable development. "We have tried to build this sustainable platform with our stakeholders because it is something we cannot achieve alone," adds Ms. Sumida. "Through collaboration, we affiliate with companies so we can achieve this goal together."

Fire and Disaster Prevention Specialists Aim for the Next Generation of Disaster Prevention

Since its foundation in 1955, NDC continues to provide fire safety solutions to a wide range of industries.



"We are a total solutions provider for fire and disaster prevention that answers all needs."

Eiichi Tohyama, President, Nippon Dry Chemical Co., Ltd.

Founded in 1955, Nippon Dry Chemical delivers solutions for fire safety across numerous industries and has risen to the challenge of differentiating its products from others on the market.

"This is my most demanding challenge," says company president Eiichi Tohyama, who introduces us to the Quick splasher, as "a firefighting device like never before".

"Quick splasher can prevent gasoline fires before they start. It is filled with 2.5 liters of fire suppressant, which can be instantly emitted from two nozzles over a wide area in as little as 1.8 seconds. The foam or Aqueous film forming foam covers the oil surface and suppresses gasoline evaporation. The danger of gasoline fires is that the vapor is quick to inflame. After 10 seconds, it catches fire, and boom, it's over."

Of course, multiple firefighting solutions are needed and the technical team at NDC are well equipped.

"Analysis of the most appropriate agent is criti-



Quick splasher

cal in explaining how the fire suppression agent works," says Mr. Tohyama. "We know the logic, we know the chemistry, and we are able to explain to customers which system would be the most appropriate one for them."

Given that the industry is somewhat conservative, the president highlights the importance of collaboration for effective disaster prevention.

"We are joining with an Australian company called Xtralis, a 100% subsidiary of Honeywell, to obtain the rights to market a product called VESDA – Very Early Smoke Detection Apparatus – which allows them to detect trace amounts of smoke."

With a mission to improve Japan's fire protection



VESDA

environment by introducing new fire detection technology like VESDA and providing customers with an environmentally friendly PFOA-free fire extinguishing agent, Mr. Tohyama believes NDC can change the conventional approach to fire prevention and aim for the next generation of disaster prevention.

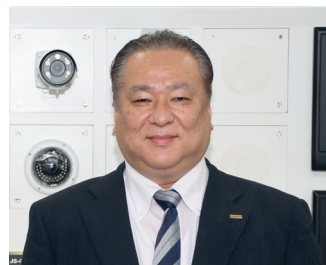
"If we were able to achieve this mission, Japanese society would become much safer," he says, with positive hopes for the coming years.



www.ndc-group.co.jp/english

The highest security is made in Japan

Starting with high-quality surveillance cameras, Japan Security System has expanded into AI to ensure optimal safety and efficiency.



Hiroyuki Takahata, Senior Vice President, Japan Security System Co., Ltd.

Founded in 2001, Japan Security System (JSS) has grown to become a leader in video surveillance in Japan. These days, its products can be found all across the country, including public offices, apartments, department stores, convenience stores and hospitals.

"We noticed the demand for greater quality products and recognized the lower quality of imported cameras, so we decided to



Edge AI

take matters into our own hands. We still procured the components from overseas, but then modified and reassembled them, with all of the fine tuning being done in-house here in Japan. That is the feature of our 'Made in Japan' series, which we want to make available to overseas markets."

As digital technology advances, JSS is looking to AI solutions to enhance its product offering.



Color barcode Chameleon CodeR

"The facial image platform collects data including gender, emotional states and number of visits," explains Mr. Takahata. "It is useful in terms of marketing and resource planning."

"It also helps us offer our clients services to, for example, ascertain remotely if our cameras are functioning as expected. It has definitely enhanced our business."

Mr. Takahata believes the fu-



Main products



Izumi Kaku, President, Japan Security System Co., Ltd.

ture will see the company contribute to a safer and more secure environment through their security cameras while also providing solutions through software and hardware to promote a more digitalized society.

"In five years I would like to be able to share the good news and many exciting stories that will put a smile on faces."

