

The hidden champions of Japanese manufacturing

While Japan has faced stiff competition in recent decades, Nippon companies still dominate when it comes to high mix, low-volume B2B technologies. Working behind the scenes supporting larger companies with their parts, components, materials and machinery, Japanese SME manufacturers are often referred to as the "hidden champions" of the nation's manufacturing industry, excelling in niche fields where they are reputed for their high-quality technologies that cannot be replicated by regional peers.

"More than 90% of Japan's business structure is SMEs. The Japanese government provides strong support to these companies and is dedicated to nurturing their growth. Our founder came from Niigata prefecture, and our company has continued as a specialist in fluid control devices," says Yoshinori Nakamura, president of one such SME, Kaneko Sangyo, who adds that "satisfying the needs of our clients instead of pursuing profit" has been key to the company's success over the past 100 years.

Yoshihiko Misugi, President of Toho Kasei, which manufactures engineering plastics and wet processes equipment for the semiconductor manufacturing industry, also highlights the ability of Japanese companies to respond to client needs as a core competitive advantage. "The strength of Japanese manufacturing lies in its attitude of responding to customer needs with its differentiated and strong technology.

Because we are trying to meet the diverse needs of our customers with a wide variety of technologies, we believe that high-mix, low-volume production is inevitably necessary."

Such customer- and market-focused development has enabled these companies to extend their technologies to many fields, as is the case with Miyaki, which specializes in anodizing surface treatment for aluminum. "First and foremost, our company vision is to be an indispensable partner to the global industry, and our core strength lies in our anodized aluminum technology," says CEO Kazuhiko Miyaki. "As we are capable of anodizing any type of aluminum we can expand and apply our expertise to various fields. The main product of our company is the surface treatment of aluminum using our own technology mainly for the anodizing of many different types of automotive parts. But we want to open ourselves up to the medical sector as well as energy, aerospace, and next-generation vehicles.

Specialty chemicals, the domain of Toagosei, is another niche area in which Japanese companies have remained ahead of the competition. "Japanese chemical manufacturers are adept at enhancing the functionality and constantly improving their products. We are proud of our company's history and approach," says Mikishi Takamura, President of Toagosei, which is pioneering development in the field of cellulose nanofiber. "We intend to grow by expanding our field

with new specialty chemical lines and chemical products with high added value, and high-quality functions and characteristics."

A specialist in cemented carbide, Sanalloy is also looking to expand the applications for its products. "We are diversifying our products so that they can be applied to a greater variety of materials. We have a lot of customers in technical fields such as forging and deep drawing. Products with very hard surfaces can be really difficult to coat, which is why we developed the P series [of cemented carbide]," says president Seiji Yamamoto. "Our customers are companies involved in advanced industrial production that demand a high level of quality," adds Mr. Yamamoto, for whom quality comes before business profits.

Indeed, offering such high quality requires strict quality control, as highlighted by Keiichi Fujimoto, President of Kanemitsu Corporation, which processes and sells special steel. Like his counterparts, Mr. Fujimoto firmly believes that quality must come ahead of profit. "Typical processing companies aim to enhance their processing speed to generate more profit. For us, we lower the processing capacity to have more time to conduct quality control. We want to ensure our client's satisfaction by enhancing the quality of our materials," he says. "Our goal is to earn our client's trust. Quality control helps us provide high-quality material and gain that trust."

Toho Kasei: Turning customers' visions into reality

Toho Kasei offers tailor-made solutions in engineering plastics and wet processes equipment for electrical device and semiconductor equipment manufacturers.



"We are working to solve problems in the current semiconductor manufacturing value chain."

Yoshihiko Misugi, President,
Toho Kasei Co., Ltd.

Established in 1956, Toho Kasei is a leading provider of engineered plastic products and wafer cleaning equipment. Consisting of two divisions – engineering plastics and wet processes equipment – the company

serves world-leading Japanese semiconductor equipment and electrical device manufacturing companies. Using reputed materials sourced from its parent company, Daikin Industries, Toho Kasei offers its clients unmatched quality and performance, with the company now looking to expand its international customer base through technologies such as S-FORM and DUPRA.



Since clean room equipment in Japan is aging, S-FORM offers companies a chance to replace said equipment without stopping production. "Our new equipment concept, S-FORM, makes it possible to renovate

the entire wet equipment area simply by finding a space of only about 4m x 2m in the clean room, and device manufacturers have taken an interest in it," says president Yoshihiko Misugi, who highlights that S-FORM is a direct response to demands "to maximize the effective use of the extremely expensive semiconductor manufacturing clean room space."

Toho Kasei's perfluoro elastomer o-ring "DUPRA", meanwhile, is a sealing material used in semiconductor equipment and an essential component for maintenance. "Major domestic equipment manufacturers also sell equipment to overseas customers, which contain our DUPRA. Most of the overseas customers who have purchased the equipment want to continue to purchase DUPRA as the same seal material for maintenance. This represents a great business opportunity for us as



S-FORM

well as a great opportunity for customers to better understand DUPRA's strengths," adds Mr. Misugi.

"By recognizing DUPRA's strengths, there is an increasing number of cases where we are considering improvements in sealing materials used in other equipment. Accurately grasping the customer's requests for a project; quickly developing and making proposals; and implementing improvement activities to solve the customer's problems leads to new business. We believe that by focusing on improvement activities, we will see DUPRA take a big leap in the future."

TOHO KASEI CO., LTD.
www.toho-kasei.co.jp

CoreStaff responding to the diversifying needs of SMEs in the semiconductor industry

Going beyond the role of a supplier, as a distribution agency of semiconductors and electronic components, CoreStaff exceeds expectations by passing useful information to its customers.

Founded in the year 2000, CoreStaff was born from a demand gap in the semiconductor industry being identified and has quickly grown to become an international player. "Japanese customers liked an interactive connection, small portions and short lead times, so when the big, traditional companies couldn't respond, we handled them one by one," explains president and founder, Masaki Tozawa.

"Now, we offer this service for the broader market, often to smaller-sized companies, and to customers from many different areas of Japanese industry. We are committed not to big customers, but to small to medium-sized customers."

This support for the procurement needs of microbusinesses and SMEs, which saw subsidiaries launched in Germany, China, Thailand, Hong Kong and the U.S.A., is a key aspect of CoreStaff's competitive advantage.

"We handle many suppliers of varying sizes and buy from many distributors so if we sell just one or two items to the customer, we have several other items to offer as a supplier, which is another of our strengths."



Masaki Tozawa with a "Thank You" letter received from Japan's Ministry of Economy, Trade and Industry (METI) in December, 2020.

"It allows us to respond to those small orders and needs of the SMEs. Also, in those situations, being the catalog distributor is a major positive, giving us the agility to supply those types



"Our hybrid support for both digital and analogue devices is unique in the industry."

Masaki Tozawa,
President, CoreStaff Co., Ltd.

of smaller orders from smaller companies."

One challenge for the likes of CoreStaff is the competition from counterfeit products being pushed onto its customers.

"It's a very big problem, but we have an analytical facility which does safety inspections to check if it's counterfeit," Mr. Tozawa highlights. "This is done at our Nagano logistics center where we have specialist equipment to identify what cannot be done by sight alone. It's not easy, but we have a good technique to find it, and that's a strong point of ours."

Expansion out of Japan is a clear goal for the company and the president is confident about its uniqueness translating well to overseas markets.

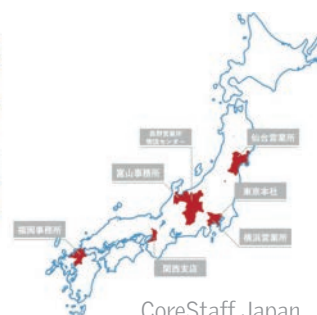
"Due to our original style, few companies are competitive like us, although there are many traditional distributors who we consider our rivals," says Mr. Tozawa. "We are, however, looking to expand beyond our Japanese customer base, but that remains our immediate focus as the market has been changing rapidly following the COVID-19 pandemic, creating a big opportunity for us."



New Nagano logistics center



CoreStaff overseas office locations



CoreStaff Japan domestic office locations

"I am, of course, very interested in the global market because we have started some catalog distribution, offering 30 to 40 brands, with many people having contacted Japanese or other semiconductor component suppliers. Unlike others, we have two aspects — as a distributor of the catalog products and as a customer-based service provider — and our hybrid support of both digital and analogue is a unique style. And we have plans to build a bigger distribution and logistics center in the near future."

"We respond to high demands on a case-by-case basis, so after several years we can match our clients' own needs and style of service with ours by analyzing and reacting to the data we gather. Our latest objective is to solve the problem of many Japanese companies struggling to meet orders given the ongoing chip shortages."

In terms of expansion, CoreStaff is already progressing a number of developments.

"We recently launched in Taiwan as there are many suppliers there but we couldn't reach them," Mr. Tozawa explains. "So far, we have six overseas branches, and I'm interested in Thailand, Vietnam and Southeast Asia as being present locally makes both contact and local solution services so much easier. Customers have been very pleased with this approach so far and I believe there are many situations around

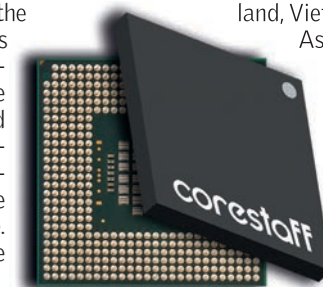
the world, which is the reason we keep expanding."

As the company continues on its ambitious path, Mr. Tozawa reminds his colleagues and other young people that trial and error is an important aspect of evolution.

"We lost 20 years on some issues, but we have to try to change."

corestaff

<https://corestaff.co.jp/cms/en/index.html>



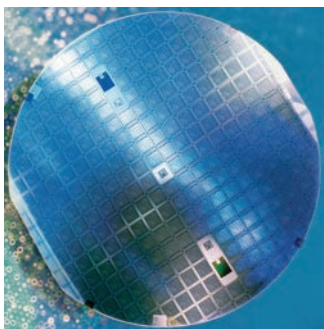
Product Image

Chemistry: The science of future inspiration

Under five business lines – Commodity Chemicals, Polymers & Oligomers, Adhesive Materials, Performance Chemicals and Plastics – the Toagosei Group has been recognized the world over for its technological strengths and value-added products.

Founded in 1944, Toagosei is known for its production of instant adhesives for B2C applications worldwide. A company that has prided itself on its ability to move with the times, it has traditionally focused on three distinct pillars: manufacturing basic chemical products until the 1960s; petrochemicals after the 1960s; and functional products to the present day.

Company president Mikishi Takamura is on hand to outline some of the group's distinctive products. "Toagosei manufactures high-purity liquid hydrogen chloride, which is used in the production of semiconductor chips," he explains, highlighting that the performance chemical is currently exported not only to Japan, but also to Asia and the U.S.A.



Chemicals used in semiconductor production processes

The firm's SQ series, meanwhile, is a coating material with enhanced resistance to radiation and ultraviolet rays, which helps to extend the service life of equipment, a notable example being the *hinomaru*, or red circle, on Japanese spacecraft.

With the global focus on the U.N.'s Sustainable Development Goals (SDGs), Toagosei has once again shown its willingness to adapt, and is currently working on a fourth pillar of products – mobility-related, energy-related and healthcare-related products – that will enhance the company's environmental credentials.

Take the electric vehicle (EV) industry, for example. Toagosei products used in EV batteries help optimize not just the quality and



Mikishi Takamura, President, Toagosei Co., Ltd.



Toagosei Hydrogen Station Tokushima



©JAXA/NASA SQ Series

function of the battery but also minimize its environmental impact.

But what about carbon neutrality more generally, and the steps the group is taking to make its processes more environmentally-friendly?

According to Mr. Takamura, the key word here is 'process'. Toagosei is not looking to directly support the production of, say, solar panels, but to enable clients to develop more efficient methods of production. "What we are thinking about," he says, "is leveraging our strengths in chemical products to help users reduce CO₂ emissions in their manufacturing."

Referring to the automotive industry, Mr. Takamura explains how

the company's instant adhesives help improve work efficiency and reduce product weight, while emphasizing that they are also used in a variety of other industrial sectors because of their energy efficiency.

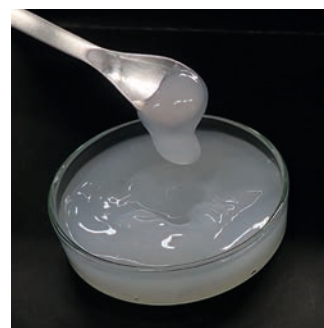
Away from the automotive sector, the blending of innovative new materials such as cellulose nanofiber (CNF) into plastic-based products means that manufacturers will soon be able to use less plastic in production. CNF may be in the early stages of development, but Mr. Takamura is adamant that it represents the future. Not only do the company's CNF production methods use far less energy than competitors, crucially, as matters stand, Toagosei remains the only firm which currently holds a patent for the process.

In addition to its CNF production, the firm has recently opened a hydrogen station, which is directly connected to the production and supply of hydrogen at a site adjacent to its Tokushima Plant, where hydrogen is pro-

duced. One of the company's stated aims is to work towards realizing a hydrogen society.

Looking to the mid-term, a recent project with Toyota shows that collaboration is a key part of business for Toagosei.

"We are looking for new partners and opportunities abroad," Mr. Takamura confirms, adding that the group prefers to partner with companies using cutting-edge materials such as batteries, semiconductors, and telecommunications equipment to manufacture their products. Co-creation partners, in other words, who know the needs of the market and can directly manufacture the products it demands.



Cellulose nanofiber (CNF)

When pressed on his legacy, Mr. Takamura highlights the importance of expansion. Toagosei is already a highly profitable company, but only by expanding the scale of its business can it secure its market position given the prevailing economic climate.

In this regard, the company's 'fourth pillar' of products takes on a new significance. A key focus in the coming years will be the healthcare industry, and the group has already developed Cell Penetrating Peptide (CPP) as a drug delivery system (DDS) for specific parts of the body such as the brain.

But as long as the group continues to expand its field with "new specialty chemical lines and chemical products with high added value, quality functions and characteristics", growth, it would appear, seems assured.



Aron Alpha has the No. 1 market share in Japan

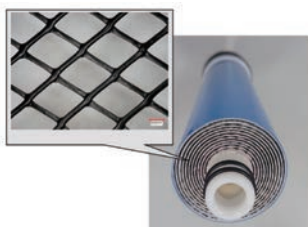


www.toagosei.co.jp/english



Comprehensive solutions drawing on over six decades of expertise

A company that specializes in electromagnetic compatibility, Kitagawa Industries provides consulting services and products focused on heat and noise countermeasures.

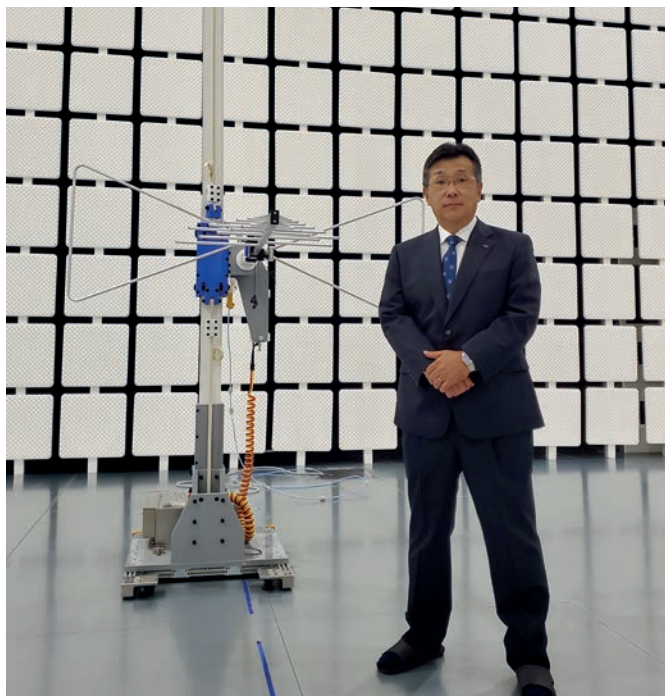


Antifouling feed spacer for RO membrane modules

The Japanese company Kitagawa Industries is a market-leading specialist in the field of electromagnetic compatibility (EMC). Boasting over 60 years of expertise, it provides consulting services and products that prevent electric/electronic components and devices from interfering with others in their environment. Based in Inazawa City, Aichi Prefecture, Kitagawa has manufacturing, sales, and other facilities across Japan, as well as 11 overseas bases in Asia, the United States and Europe.

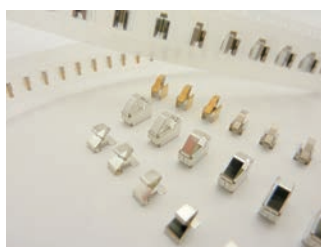
"Our main focus is on consulting for EMC countermeasures," says President Yoshihiro Hirakawa. "There are many EMC testing facilities around the world where customers can bring in their products. The key advantage our EMC center has over others is that our consulting service can provide solutions when customers' products fail an EMC test. There are many companies that specialize in EMC testing or EMC-related parts, but we're the only one in the world that offers a comprehensive service: from testing, to consulting, to the implementation of solutions.

"The 'integration' approach first started with responding to the requirements of our customers in their product development. They're likely to visit us to evaluate whether their products comply with various EMC standards right before the mass production stage. Suppose a test shows non-compliance with EMC standards and

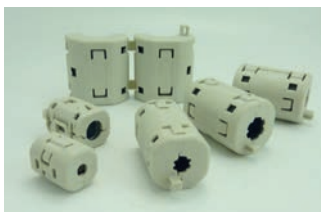


"We're the only company in the world that offers a comprehensive EMC service: from testing, to consulting, to the implementation of solutions."

Yoshihiro Hirakawa, President, Kitagawa Industries Co., Ltd.



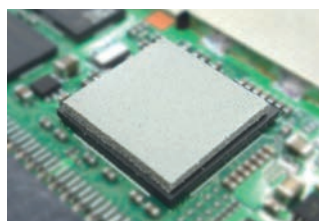
On-Board contact for EMC



Sleeve ferrite clamps for EMC

the production schedule cannot be delayed; countermeasures must be taken very quickly. Customers' engineers are likely to have limited experience in EMC. Our highly qualified professionals can help them to comply with standards."

Kitagawa's wide portfolio of solutions includes noise-sup-



Cool provide for thermal management



EMC solutions services

pression, thermal management, anti-vibration and sputter technology; while its products range from wiring clamps and cable ties to snap spacers designed to secure components in place. Kitagawa's sights are also set on developing a technique that can be applied to customers' prod-

ucts during the design process, rather than being introduced as a fix when a problem occurs at the manufacturing stage.

This drive is in line with the 'seeds' principle, a branch of the firm's production development philosophy that seeks to anticipate clients' needs. "We strive to predict changes in society, infrastructure, technology and the future products of our customers in order to be prepared for those changes," Mr. Hirakawa explains. "In other words, we nurture the 'seeds' of new business."

Another key future focus in product development is the integration of technologies that Kitagawa offers its clients; for example, noise-suppression and heat-reduction systems can be combined. "We have the ability to propose solutions for both at the same time," Mr. Hirakawa says. "I think a combination of noise and heat-prevention technologies will generate a synergetic effect to provide new value."

Kitagawa works with clients in a wide range of sectors. "Our products are targeted for use in motor vehicles, home appliances, industrial equipment, machine tools and semiconductor manufacturing equipment," Mr. Hirakawa says. "And we plan to expand the business to include medical and environmental energy equipment. In fact, inquiries and sales related to those fields have been increasing in recent years."

As well as expanding into new business areas, Kitagawa is also out to boost its client base by increasing its international reach. "Our overseas business has developed in alignment with the growing demands of our customers that transfer production overseas," Mr. Hirakawa notes. "Therefore, most of our customers are Japanese companies operating in China and ASEAN countries, with the exception of Germany, the U.S. and Taiwan. We want to diversify our customer base by capturing untapped foreign customers, particularly in China, the U.S. and European countries."



www.kitagawa-ind.com/eng

Sanalloy's cemented carbide the hidden linchpin of many industries



Sanalloy is leveraging its expertise to develop next-generation cemented carbide products to meet the demands of ever-changing industries.



"We focus on quality first, not business."

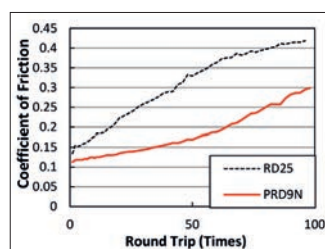
Seiji Yamamoto, President,
Sanalloy Industry Co., Ltd.

Founded in 1963, initially as the Sanyo Alloy Research Institute, the Japanese company Sanalloy is a leading specialist in the production of cemented carbides – heavy metal alloys whose hardness is second only to that of diamonds. Cemented carbides are the ideal material with which to create the cutting, drilling, molding and welding tools used in a range of manufacturing industries, and Sanalloy's extensive portfolio of clients – both in Japan and abroad – includes automobile, aircraft, electronic appliance and steel producers. "Our customers are companies involved in advanced industrial production, and are all companies that demand a high level of quality, both domestically and internationally," says President Seiji Yamamoto.



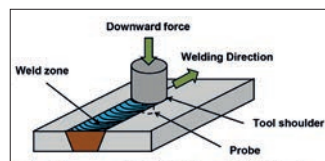
Based in Fukusaki, Hyogo Prefecture, Sanalloy not only adheres to a strict quality commitment – "it's our highest priority," Mr. Yamamoto says – but is also dedicated to remaining at the cutting edge of its cus-

tomers' ever-evolving industries. For example, the rise of electric vehicles (EVs) in the automobile sector has prompted the firm to develop its P Series of cemented carbides, which are better suited to working with the lighter materials used to make EVs.



Coefficient of friction for copper alloy

"Copper and aluminum alloys, which are lightweight new soft materials, have problems such as easy surface adhesion when cemented carbide is used in the manufacturing process, due to their high affinity with cobalt and nickel, the binding metals of cemented carbide," Mr. Yamamoto says. "The P Series has a reduced coefficient of friction without compromising conventional mechanical properties, and has excellent resistance to seizure and wear against soft materials. A lower coefficient of friction suppresses the frictional heat generated during machining, and thus suppresses seizure." He adds: "The P Series is a hard material, yet resistant to chipping. Conventionally, when a material is hard, it cracks easily; the P Series is a product that combines the properties of being hard but resistant to cracking."

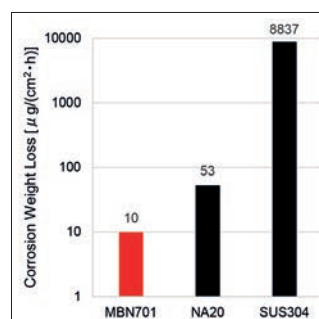


Working process of FSW (Friction Stir Welding)

Sanalloy's dedication to innovation has also led it to create

the FSW7 cemented carbide, which is specifically designed for tools used in friction stir welding, a ground-breaking method of welding that harnesses friction to join two metal components, rather than having to melt them together. "Our FSW7 cemented carbide for friction stir welding tools has excellent rigidity, wear resistance, oxidation resistance and seizure resistance at high temperatures," Mr. Yamamoto says.

Another state-of-the-art Sanalloy product, TNE40, is an example of the company's willingness to diversify from its core business to meet customers' varied needs. A cermet rather than a cemented carbide, it provides particularly effective heat resistance. "We conducted a test to measure the rate of weight change before and after leaving a tool at 900°C for one hour," Mr. Yamamoto says. "The weight change rate of cemented carbide after the test was 111%, whereas that of TNE40 was 100%, showing almost no oxidation. This indicates it's an alloy with excellent oxidation resistance and is suitable for wear-resistant applications at high temperatures."



Comparison of corrosion weight loss of hydrofluoric acid aqueous solution

The MBN alloy is also representative of Sanalloy's ability to branch out. "Plastic products are used in various industrial fields such as automobiles, home appliances, office automation equipment and medi-

cal care, and many are mass-produced by injection molding," Mr. Yamamoto explains. "Especially in the injection molding of fluoroplastics, resins containing hard particles, etc., high corrosion and wear resistance are required for parts used inside machines, but there was a history of corrosion and wear progression even in our NA20, which is one of the most



corrosion-resistant cemented carbides. To meet this demand, we developed a new corrosion and wear-resistant alloy, the MBN alloy, which is completely different from cemented carbide, and succeeded in its mass production."

Despite Japan's declining population, Sanalloy's domestic sales are rising, Mr. Yamamoto notes. Business is also on the up internationally, and the company is committed to an ongoing process of global expansion. "We have overseas sales and production bases in Asian countries such as South Korea, Thailand, Malaysia and China," Mr. Yamamoto says. "Currently, policies linking the economy and security of each country are emerging, and we plan to expand our sales and production bases in accordance with the policies of each country. As regions that we'll place particular emphasis on in the future, we're focusing on North America and India."

Specialist auto parts maker geared up for the future of mobility

Johoku's wheel and component technology is focused on supporting the future of mobility, both in Japan and overseas.



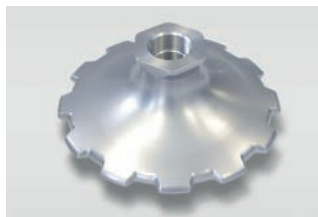
"We are eager to open our doors and export to companies all over the world."

Yoshihiro Kawakami,
President,
Johoku Industrial Co., Ltd.

Since its foundation in 1918, Johoku Industrial has been one of the most trusted manufacturing partners for Japan's motorcycle and wider automotive industry. Of the company's production volume, 70% is for motorcycles – its main products being cast wheels and spoke wheels among others – with the remaining 30% for automobiles, where an increasing proportion of this is focused on technologies considered the future of mobility, including parts for the fuel cell vehicle (FCV) and electric vehicle (EV) markets.



Current production of automotive parts (Turbo, FCV, EV)



"Our motorcycle production volume is three times smaller than it was 20 years ago," says Yoshihiro Kawakami, President of Johoku Industrial. "But our manufacturing costs have remained the same or less thanks to the strengths of our value production kaizen [continuous business improvement] and manufacturing philosophy."



Trial parts for aircraft (Inconel), a future business

Industrial engineering is an area of speciality that is concerned with the optimization of complex processes by developing, improving and implementing integrated systems of people, knowledge, information and equipment. "We are still in the process of implementing kaizen with our Theoretical Value Production," explains Mr. Kawakami.

The company's core technology is machining that processes steel and aluminium, whilst its second focus of production is the painting of aluminum parts, with the final part of its manufacturing process being assembly. With its expertise in machining, Johoku was appointed as a supplier on one of the first FCV projects. Instead of being powered by a combustion engine, FCVs are powered by fuel cell stacks, which generate electricity from a reaction between hydrogen and oxygen from the air. Not only do they offer a form of zero emission transport, as they only emit water, but FCVs are highly energy efficient, and the hydrogen used in them can be manufactured from natural energies such as solar and wind.

"Our product is a critical part that supports the high-pressure hydrogen tanks for the FCV car on both ends," says Mr. Kawakami. The company is also involved in the manufacture of EVs through parts production for heat exchangers, which are key components for temperature reduction.

"We have already manufactured these parts for EV cars; our direction is therefore towards EVs, in line with the worldwide movement," explains Mr. Kawakami.

To capitalize on this opportunity, Johoku's strategy is to target both Japanese and Indian car manufacturers, with

the company setting up a factory in Chennai, South India in 2014. "India is a huge market,



Head office

particularly for motorcycles, and we've recently established a contract for a technical assistance agreement for motorcycle wheels with a large company there."

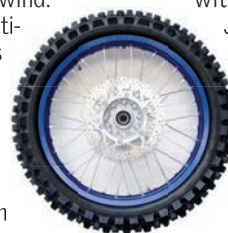
Not content with cracking one of the world's biggest countries with its core technologies,

Johoku is also now setting its sights on the final frontier, space – or at least the aerospace sector – with its solutions.

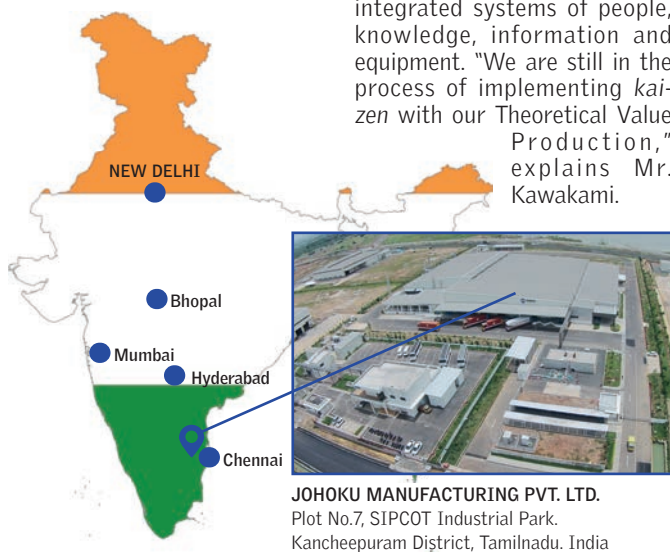
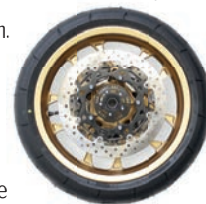
"Aerospace is a new frontier for us.

There is a joint association called SO-LAE, with 14 companies in Shizuoka Prefecture being

members of the association. Recently, we took part in an aerospace exhibition in Tokyo," says Mr. Kawakami. "We are working together on how to assist the exciting developments in aircraft manufacturing."



Current production of assy unit (motorcycle cast wheel and spoke wheel unit)



JOHOKU MANUFACTURING PVT. LTD.
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Kancheepuram District, Tamilnadu, India

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Kashima Coat on FOX Suspension

Miyaki: The anodizing surface treatment specialists

Supporting major Japanese and worldwide brands with its technology, Miyaki's ability to anodize aluminum is widely recognized and has become indispensable for its global customers.



Kazuhiko Miyaki,
CEO, Miyaki Co., Ltd.

The value of aluminum is today being re-evaluated amidst heightening ecological awareness due to climate change. This treatment of the metal has spread to encompass industrial goods and components in line with greater market demand for more functional and diverse products. Light, strong, and easily recycled, aluminum is on the verge of a new leap forward owing to the successful development of leading-edge surface treatment technologies, such as those developed by Japan's Miyaki.

"Miyaki's Kashima Coat treatment is an independently devel-

oped of hard anodizing with the goal of enhancing wear resistance. Friction in the manufacturing process, which commonly occurs due to a lack of proper lubrication, can cause not only issues for manufacturers, but also environmental damage too. The Kashima coat – which has produced tremendous results protecting various aluminum parts from wear and tear – is created by filling the countless regularly aligned pores of the hard anodizing (anodic oxide) film generated via primary electrolysis with the lubricating material, molybdenum disulfide.

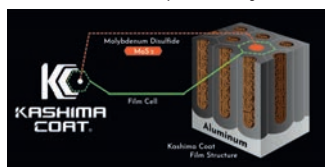


Image of Kashima Coat

"Along with coating products with a clean membrane, Miyaki's entire production process has been made pollution-free. This corporate stance is highly appraised with the products we produce," says Mr. Miyaki. "We now actively promote the development of new and original technologies amid new recognition of our position as a specialist manufacturer of aluminum surface treatments. The fusion of nature and chemicals is something we believe to be a vital keyword in the realm of 21st century science and technology."



www.kashima-coat.com



Structure of Kashima Coat film opened and applied key technology for generating an excellent membrane on aluminum," says Kazuhiko Miyaki, President of Miyaki.

Kashima Coat is a lubricated anodizing treatment developed by Miyaki Corporation by adding a lubricating function during the process

RASCO: The world's top-level technology in high-precision air conditioning and humidity control finds new applications

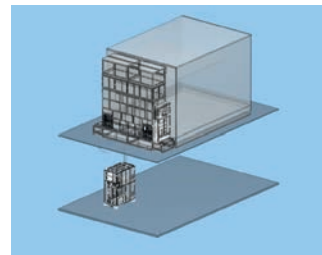
Building on its long-cultivated technology in environmental chambers, RASCO supports the improvement of semiconductor production processes.

"We are looking for partners with unique technologies for co-development in the semiconductor industry."

Kenichi Horino,
President, RASCO Co., Ltd.



As manufacturing experts, RASCO has been supplying its customers with special industry machinery since its foundation in 1964. With a vision of continued growth and the potential to link up in new collaborations, the company's new president Kenichi Horino understands the importance of quality being at the heart of everything.



"The source for our excellence and high-quality standards not only comes from inside our company but also from our many valued customers, who make sophisticated requests," he says. "Monozukuri is not a one-sided activity, and reaching the customer's ultimate needs can only be achieved by working together. "From the design phase to assembly, after-sales and maintenance services, we aim to satisfy the customer beyond their expectations."

Developing those partnerships is a firm objective for Mr. Horino, something that is already happening in Taiwan and Korea, with technical benefits and incentives given to local Korean companies.

"As a joint partner, RASCO has shared our expertise with Korean

companies who are looking to implement new technology for Made-in-Korea products," he says. "With many companies worldwide making copycat products, we must choose very carefully who to align with to maintain our strict standards and practices, with the intention of building a very solid and fruitful relationship."

With a growing consciousness about the environmental impact of these manufacturing machines in the semiconductor sector, RASCO is well aware of its own responsibility.



"Lowering electricity consumption and applying corporate carbon neutrality measures and SDG principles is key," explains Mr. Horino, "and our products help customers comply, improving the working environment and extending the life cycle of their products."

"Our key goal is to continue doing business at the highest standard possible to secure the long-term future of the company, while creating a happy and satisfying environment for our employees."



www.RASCO.co.jp/en

Nippon Oil Pump seeks to strengthen its global presence

With an already diverse product line-up, demands for climate action have seen the group explore new possibilities with a view to increasing its overseas sales ratio.

First established more than a century ago, Nippon Oil Pump Co., Ltd. (NOP) has built a reputation as a supplier of reliable, innovative products which are crucial to the machine tool industry.

While most firms follow the mantra QCD (quality, cost, delivery), for NOP, delivery comes before cost. Indeed, according to Osamu Abe, President of NOP, quality and delivery are the reasons why the company is able to compete in the global market.

With established core products such as its Trochoid pumps and hydraulic pumps, a strong global presence appears more than possible, not least in the wake of COP 26 and the grow-



"In Japan and in the global market, quality comes first and foremost for our company; we are always striving to improve."

Osamu Abe, President,
Nippon Oil Pump Co., Ltd.

ing expectation that companies deliver on climate action.

But it is arguably NOP's latest line of products that offer the most potential in this regard.

Take the newly developed NOP filter pumps, for example, whose all-in-one func-

tionality not only improves production efficiency but also reduces maintenance costs. With a unique double-cyclone system that removes both large debris and small particles, lead-

ing to the supply of filtered coolant fluid, the technology is an aggregation of the multiple components of a standard coolant unit. This

means companies can save not just on maintenance costs but also floor space. And coming soon: a high-pressure

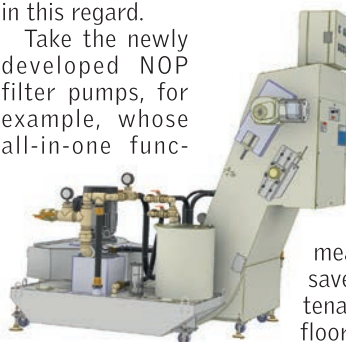
model to match its low-pressure counterpart.

Working alongside the NOP filter pumps is the TNC coolant unit, a system which prevents the build-up of sludge deposits, by suctioning, separating and filtering them with a cyclone pump, ensuring any dirty liquid is captured in a wire-mesh bucket. By providing clean fluid for machining tools, the unit reduces the likelihood of machines becoming defective or their pipes becoming clogged.

Though a relatively new product category, Osamu Abe is anticipating that the NOP filter pumps will become a "core product" in the company's line-up in the foreseeable future, making the prospect of increasing its overseas sales ratio to 50% from the current 30% a genuine possibility. Above all, the president states that his mission is to "lead NOP to sustainable growth".



NOP® Filter Pump



TNC

NOP Create the New Stream!
Nippon Oil Pump Co., Ltd.
www.nopgroup.com/english

Silent technology creating a better and safer world

The ideological roots of any company can have a significant bearing on its success and longevity, something illustrated perfectly by Japanese SME Kaneko Sangyo, whose discreet innovation has been satisfying customers for over 100 years.



APOS (Auto Pro Operation by Smart Application)

Founded 104 years ago, Kaneko Sangyo is expanding its business overseas with a group that includes STK ENG and Vietnam Kaneko in Vietnam, Shanghai Kaneko Auto-instrument in China and Korea Kaneko in Korea, with its long-held ideology leading to the tagline, 'silent technology'. As a specialist in fluid control devices, the company has survived this long by "concentrating on

satisfying the needs of our clients instead of pursuing profit," says president Yoshinori Nakamura.

This ideology is key for Kaneko Sangyo and is best demonstrated by the eight-year development of its new IoT product, APOS (Auto Pro Operation by Smart Application).

"Having a maintenance-free environment throughout the year is ideal and APOS was designed for preventive maintenance," says Mr. Nakamura. "Like in health check-ups,

where they give recommendations according to one's results, APOS monitors what happens in the fluid control system and addresses

small issues before they become a major problem. Predicting and preventing issues in advance involves analyzing big data using AI."

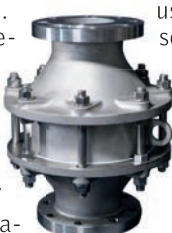
"Major fire risks can be mitigated using our breather valve and flame arrester safety devices," he adds, "including the use of renewable energy sources such as hydrogen."

Collaboration is increasingly important for the future for the Japanese SME, along with continuous improvement, as the president explains. "We are actively seeking

partners, domestic and overseas, who already employ AI and digital technologies to create a connected industry. We must discuss our partnerships further to harmoniously grow together.



Keeper Breather



Flame Arrester



Breather valve with Flame Arrester



"Customer satisfaction is embedded in our company's DNA."

Yoshinori Nakamura,
President &
Representative Director,
Kaneko Sangyo Co., Ltd.

stK
Silent Technology
KANEKO

www.kaneko.co.jp/eng

Jujo Chemical: At the forefront of innovation in inks and coating agents

Deeply committed to R&D, Jujo Chemical has developed products such as its UV inks, which emit significantly less CO₂ than conventional inks, while supplying key industries, including automotive.

Since it was founded back in 1957, screen ink manufacturer Jujo Chemical has been offering innovative products to its customers across various industries including electronic devices, medical care, cosmetics and fashion. Thanks to diligence, steadfastness and a clear plan, continued success at home and overseas is expected.

"Our capacity to continuously and stably create high-quality products is one of our core strengths," says company president Hiroshi Koyama. "However, if we carry on production only locally in Japan, the costs are going to be higher. Therefore, as seen with other Japanese companies, by transferring our monozukuri methodology overseas, creating and selling our products in those markets, we can reduce our overall costs."

"Taking our expertise abroad also allows us to leverage lower labor costs, which major Japanese companies are good at doing," he adds.

With the screen ink market being a competitive one, it's in UV ink where Jujo Chemical has an advantage.

"There are quite a lot of competitors in the screen ink market, so I believe that our strength lies in our UV ink, which is of the highest quality," explains Mr.



UV ink surface decoration

Koyama. "This has led to us being highly valued by our customers, and a lot of our sales come from our UV ink. Our functionality ink, such as the ink used for conductivity and insulation, also has a very high reputation."

And when it comes to innovation, the company knows how



"Since 2021, 100% of the electricity used at our plants comes from renewable energy generated by hydro-electric sources. This accounts for more than 90% of the total electricity that we use as a firm."

Hiroshi Koyama, President, Jujo Chemical Co., Ltd.



Ink production by three-roll mill

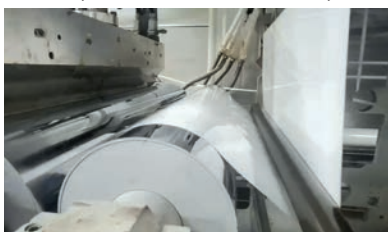
important new ideas are to a constantly changing landscape.

"The market for the screen printing industry, which we are in, will shrink," believes Mr. Koyama. "For that reason, we are concentrating our efforts on new product development and eager to achieve innovations. We have two important themes in our R&D. The first is

automobiles, specifically conductive inks as substitutes for wire harnesses and laminate materials for EV batteries. The second theme is our response to the environment.

"We believe that these two areas require drastic change,

and this poses its own challenges, including coming up with new environmentally friendly products, potentially water-based or those



Lamination machine

that use biomaterials. We are also developing conductive layers with our inks for Perovskite solar cells, which will spread in the near future. This is the second pillar of our R&D strategy."



Conductive ink as substitute for wire harnesses

This approach leads us back to the focus on international collaboration.

"Right now, we do not have a deep partnership with another company, but we are certainly open to that. Due to the development challenges in our area of focus, collaborating with the right companies would enhance both the speed and quality of development.

"Based on the current population of the regions, as well as the expected growth of these markets, our target is China and Southeast Asia. We already have locations in Taiwan, Thailand, China and India, and they will be our future concentration points. A characteristic of our overseas business is that there are no Japanese people and all employees are local, allowing us to serve and support the mindset and needs of those customers."



Conductive ink for textiles

Mr. Koyama is driven towards establishing a lively working environment in which his employees feel motivated and where they set targets for themselves, aligned to the company objective to deliver unique and innovative products that enhance human life.

"The greater amount of our products that the customers gladly purchase, the better we can contribute to society," the president concludes.

Special steel fit for any purpose

Kanemitsu Corporation, which processes and sells special steel, has earned the trust of its customers through its consistent commercial distribution, from the procuring and storing of base materials of blast furnace steelmakers, to the processing of those materials.



Keiichi Fujimoto, President & Representative Director, Kanemitsu Corporation

As a company specializing in special steel, high quality control is a prerequisite due to the trust gained from consistency. In this regard, Kanemitsu Corporation has built on its own quality control system since its establishment in 1957.

Despite the company's modest size of approximately 50 employees, Kanemitsu Corporation prides itself on carrying out all of its processes in-house, from



Headquarters in Hyogo, Japan

receiving steel coils to processing them and then directly supplying the finished product to its clients. This holistic approach allows the company to keep a strict eye on quality and modify the processes according to each customer's needs.

Company president Keiichi Fujimoto explains: "The front and back of the coils are inspected by employees, therefore even small defects that cannot be detected by machines are not overlooked."

Kanemitsu Corporation's main customer base comes from the automotive industry, with its special steels being used in a

variety of applications such as seat belts, clutches and springs. Many of these uses involve protecting human life, showing the trust the company has gained from its customers through its strict quality control.



Slitting machine

Kanemitsu Corporation has expanded its business since opening a processing factory in Thailand, and plans to build new domestic facilities to meet growing needs in the Japanese market. As the automotive industry begins its shift towards electric vehicles, the company is well-placed to



Kanemitsu (Thailand) Co., Ltd.
Kanemitsu Slit (Thailand) Co., Ltd.

provide the steel for the safety features of the future. Mr. Fujimoto understands the need to be flexible with its strategy in a rapidly-changing market, adding: "We will continue to listen to our customers' needs and make proactive preparations so that we can respond to any situation."



www.kanemitsu-s.com

Sankin: High-performance steel supporting key industries

A manufacturer and trader, Sankin Corporation is a major steel provider for many industries, including the automotive sector.

A company with over 77 years of experience, Sankin is a leading Japanese producer of cold-drawn steel pipes and stainless steel pipes, chiefly supplying manufacturers in the automotive, industrial machinery, construction machinery, shipbuilding and water supply industries, among others.



PROSANKIN factory, Mexico
www.prosankin.com

The firm also operates as a trader and wholesaler for other steel pipe producers in Japan. If there is a request from customers, Sankin always delivers on time in accordance with their needs.

Sankin's steel pipes guarantee the high performance their customers depend on. "We supply our products mainly for safety-critical automo-

"We supply our products mainly for safety-critical automotive parts – for example, handles, brakes or the suspension, which are closely related to human safety."

Takaharu Den, President, Sankin Corporation



tive parts," says president Takaharu Den. "For example, handles, brakes or the suspension, which are closely related to human safety. Making an automobile requires very strict quality standards – and Sankin meets those requirements."

Mr. Den adds: "We also have a steel equipment division manufacturing various steel products such as storage units, multi-story parking

facilities, greenhouses, stairs, etc. Since we have two big pillars of the business, one can compensate for the other in uncertain times."

Having previously bolstered its network of steel production sites with overseas plants in Indonesia and Thailand, Sankin has now also set up a Mexican venture, PROSANKIN, a state-of-the-art manufacturer of cold-drawn mechanical



SANKIN produces various steel products

tubing, specializing in DOM, Cold Drawn Seamless, and SAE J525 products. PROSANKIN has a highly focused goal of being the "Go-To" manufacturer for clients across North America.

"Currently, our international focus is PROSANKIN," Mr. Den says. "We've just started the business and we're committed to taking the right path to benefit our customers. As we continue to make progress in having a world-class and fully operational facility in Mexico, expansion into the North American market becomes attainable."

SANKIN
www.sankin.co.jp

Hanshin Metalics: The hub that connects steelmakers and customers

Speed and cost are crucial factors in the manufacturing industry and, as a special steel trading company, Hanshin Metalics delivers proposals that ensure superior results at all times.



"We have special materials in Japan, and we are currently looking for companies in Europe and the U.S.A. that genuinely need them."

Toshihiko Kawai,
President & CEO,
Hanshin Metalics Corp.

First established in 1956, Hanshin Metalics has been supplying materials and parts to manufacturers in the industrial machinery sector for the better part of 70 years.

Currently, the company supplies round-shaped parts for all kinds of industries, such as hydraulic parts for construction machinery, spindles and housings; valve rods and flanges for machine tools; and shafts and sleeves for pumps. Through its external supply chain, meanwhile, clients can access services such as heat treatment, surface treatment and other required processes.



Automated production line

More than just a special steel trading company, Hanshin Metalics is a one-stop solution provider for customers, providing



Extensive inventory of special steel with automated storage system

machining services in addition to its stock service.

As company president Toshihiko Kawai explains, if production flow is a river, then Hanshin "acts as a hub to cater to different needs and to maximize efficiency when it comes to the transportation of materials, consolidating materials, processing, heat treatment and logistics for a premium service."

Unlike many other companies, Hanshin Metalics, with seven bases in the Kansai region, emerged from the COVID-19 pandemic relatively unscathed and, in fact, has achieved record performance. This, says Mr. Kawai, is due to the firm's willingness to expand into new areas and cultivate new clients.

"One of the new areas we have begun to focus on is the aerospace industry and we have acquired JIS Q9100. Since the establishment of our Aerospace Division in 2014, we have developed direct business relationships not only with domestic steelmakers but also with steelmakers in the United States, the U.K., Taiwan, Italy and eight other countries in order to supply special materials to domestic aircraft parts manufacturers. Now, we are one of the stockists with the largest inventory of 15-5PH in East Asia and have supplied them for not only the domestic market in Japan, but also Western and Asian countries."

Hanshin's ability to procure materials such as titanium alloys and machine them in-house gives the firm a significant advantage over competitors, with a 20 MPa ultra-high-pressure coolant allowing it to cut materials at higher speeds and lower costs than other market leaders. The company continues to evolve and in recent years has supplied final products by offering surface treatments such as thermal spraying, overlay and plating, achieving customer satisfaction at home and abroad.



In-house machining service

Elsewhere the rapid depreciation of the yen does not necessarily spell doom for Japanese suppliers. Mr. Kawai says: "We see the exchange rate situation as an advantage, and an opportunity to increase exports of machined parts to other areas such as the U.S.A. and Europe." Japanese suppliers, already highly regarded for the quality of their output, stand to operate at a significant cost advantage for their overseas clients.

By way of example, a 100,000-yen product that cost around \$910 in 2020, would now be available for \$690, a reduction of almost 25% even though the quality of the product remains the same.

Looking to the future, Mr. Kawai has identified the wind power and green technology sectors as presenting opportunities to move into the U.S. and European markets.

The shortcut to the company's overall prosperity, however, lies in the growth of local staff through self-reliance. "We don't want one CEO to control the entire company," Mr. Kawai says. "Instead, we want all employees to think as a CEO thinks, and to increase sales and the company's potential on their own. By letting them think for themselves, they grow by themselves."



Abundant stock of 15-5PH (AMS5659 TYPE 1)

Soundraw Inc, meanwhile, an affiliated company, offers a subscription-based service that allows customers to create and download their own music, and is gaining significant attention in the United States. Employees who think independently can create such new trends in completely different areas.

Mr. Kawai stresses that spreading joy is one of the core tenets of his philosophy. "I believe that life is about seeing how many people we can make happy. And in the next four years I will be striving to make as many people happy as possible."



www.hanshinmetalics.co.jp/en

Promoting shared value through rubber compounding technology



"Our goal is to establish a structure that offers high-quality rubber products at low prices mainly in the ASEAN market, which is undergoing remarkable growth."

Hidehiro Nakamura, President, Yamato Chemical Co., Ltd.

While Japan's industrial sector looks to strengthen its position overseas, the developing economies in the ASEAN region are achieving rapid

Since its establishment in 1972, Yamato Chemical has evolved into a premiere provider of rubber products for a wide range of industries.

growth across the board, bringing major changes to world markets. Having accumulated rubber compounding technology and production know-how since its founding



Yamato's products

50 years ago, Yamato Chemical is today striving to boost domestic sales within Japan while further expanding its sales in overseas markets, particularly in ASEAN.

"By reinforcing the management our three overseas subsidiaries in Thailand and Vietnam, including Yamato Chemicals Thailand, Yamato Polymer, and



Medical products

Yamato Rubber Vietnam, our goal is to establish a structure that offers high-quality rubber products at low prices mainly in the Southeast Asian market, which is undergoing remarkable growth," says Hidehiro Nakamura, President of Yamato Chemical.

With this strategy to regionalize and to open factories abroad, the company is on a mission to ensure that its high level of quality remains standardized and equal across its production sites – an ethos at the core of Yamato Chemical's business philosophy.

"No matter how advanced your technology, and how great your products are, you must have the same set of values, as if operating in Japan," explains Mr. Nakamura. "The local companies must have the same vision and goals as the mother com-



Automotive products

pany. This is the core foundational principle when a Japanese company starts local production abroad."



yamato-chemical.co.jp/en-home

Global parts supplier connecting the world with its Soft Press technology

Accumulating know-how and expertise over the last 67 years, Chiyoda Integre has proven ability to process soft materials with high precision, serving both the electronic component and automobile industries.



"We are looking to expand our bases in advanced nations such as the U.S. and Europe."

Mitsuaki Koike, President, Chiyoda Integre Co., Ltd.

Founded in 1955, Chiyoda Integre has carved out its soft material processing business through expertise and with an appreciation of how to engage with overseas



Ohio factory in the U.S.A.

markets, not pushing Japanese ways but instead respecting the country where it is investing.

"We need to comply with local rules and regulations," says company president Mitsuaki Koike. "We also need to adapt to the local environment. That is one of our strengths."

A decision for any company targeting business abroad is whether to go it alone or collaborate with others, something carefully considered at Chiyoda Integre.

"We chose to enter overseas markets on our own, without any partnerships," says Mr. Koike. "An-

other characteristic of our business policy when we go abroad is that we do not belong to any group. We remain fully independent."

One of the differentiating factors for the company is its unique processing technology, as the president explains.



Factory environment

"Our Soft Press technology allows us to process and cut soft materials with high precision, which is much more difficult than with hard materials such as stainless-steel plates. Without our technology to



Clean Room

achieve this, our customers' final products would not work as well. We have 24 sales offices and 18 factories in 15 countries around the world. And we are dealing with 80,000 kinds of products, 90% of which are designed according to customer specifications."

With vast global experience and a policy of only hiring top international talent, Mr. Koike is targeting expansion into the U.S. and Europe.



Japan's No. 1 chain supporting everything from motorcycles to industrial products

Since its establishment in 1941, Enuma Chain, a comprehensive manufacturer of chains, has supported industry with a series of developments to meet the needs of an age of diversification and complexity.



Industrial silent chain

Enuma Chain is a pioneering developer of the sealed chain, where grease is encapsulated in a seal ring to improve service life. Continuous improvements have resulted in a service life that is

now 10 to 20 times longer than that of conventional chains.

Sealed chains are used not only for large motorcycles, but also have several industrial applications, demonstrating high abrasion resistance to abrasive elements such as dust, dirt, and sand.

The wide variety of colors available for motorcycle chains has been well received by customers as a way to enhance the appearance of their beloved vehicles. The "ThreeD" is a three-dimensional shape made by high-precision forging machinery in Japan to reduce weight without compromising strength, and has been adopted by Kawasaki Motorcycle Co. Its superior performance and functional



Special-sealed industrial chain

beauty, coupled with its color, set it apart from other ordinary chains.

Worldwide, Enuma Chain is the sole manufacturer of the round pin-type industrial silent chain. With this silent chain, there is no risk of snapping as with belts, and the structure of overlapping plates allows for a variety of chain widths, making it possible not only to transmit power, but also to transport objects. In addition, the round pin allows for downsizing and free bending angles of the sprocket, and its high versatility means it can be used in a variety of industries, including coin washing processes, creating high-temperature forgings that form automobile parts, and driving turbines in thermal power plants.



Motorcycle ThreeD chain

EK will continue to strive for development that meets the needs of our customers. Please contact Enuma Chain for consultations on special products and new specifications.



www.enuma.co.jp/en

Sky's the limit for Nagano Industry



"Always consider the customer's point of view, and provide creative products and services that are safe and easy to use."

Yasuhisa Tsukamoto,
Representative Director,
Nagano Industry Co., Ltd.

Designed and manufactured in Japan, Nagano Industry has a long history and extensive technical expertise in crawler tracked boom lifts. These machines have been developed through empirical observations on worksites as well as feedback from customers who work in challenging conditions on building sites across the world.

Nagano Industry is reaching new heights in aerial work platform solutions as it expands its activities in Europe by building a strong distributor network.



EU office in The Netherlands

"Our innovative power is based on knowledge built up over a half a century of production and distribution of construction equipment, radio controlled systems and electronic manufacturing services. Using state-of-the-art technologies, we are building on this experience for the future," says Yasuhisa Tsukamoto, Representative Director of Nagano Industry.

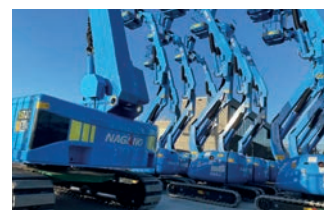
Established in 1968, Nagano's control devices and software



have been developed in-house over decades, with its machines designed to deliver an exceptionally smooth driving experience, even on rough terrain surfaces.

"At Nagano, where we try to embody the spirit of *monozukuri*, we are pursuing high quality in manufacturing and high customer satisfaction regardless of whatever difficulties we encounter in the process," says Mr. Tsukamoto. "Alongside our steadfast commitment to innovation, the safety of our machines is of the utmost priority to us."

Carrying this philosophy forward, Nagano is now making a serious commitment to becoming a long-term European supplier by producing machines specially made for the European market, such as its 12TC and 15TJC models. "After a year of preparation and organization, we



Reaching new heights with safety

are now ready to launch Nagano Europe. Our European office will have a substantial number of machines in stock available for testing and direct delivery, also we are able to offer immediate and efficient sales support and quality service," says the Nagano Representative Director. "The company's strategy for success is to give professional European services and respond promptly with parts supply, as well as to keep on innovating and developing. Also, in order to meet the increasing needs and inquiries from Asia in recent years, we have established dealers in Korea and Taiwan, and are building a sales network in other parts of Asia."



www.nagano-i.jp/
www.nagano-access.com