

The might of *monozukuri*: how Japanese companies remain untouchable in many niche fields

Japan has faced stiffer regional competition from the likes of China, Taiwan and Korea in recent decades, as these countries have grown increasingly stronger in areas such as electronics, semiconductors, and automobiles. But behind the scenes, Japanese SMEs still dominate niche B2B-facing industries, leveraging Japan's *monozukuri* craftsmanship philosophy, which entails the development of superior-quality components and machinery defined by unmatched performance; as well as an acute understanding of customer needs.

"Japanese companies are very meticulous in responding to the end user's needs. By doing so, they have greatly improved their product line-up," says Toru Nishido, president of Iwatsu Electric, which manufactures communication systems, printing systems, and test and measurement systems. "Japanese *monozukuri* lies in the developers, that is, the team always caters to the needs of users in great detail."

"For our company, *monozukuri* means pursuing customer satisfaction with regard to quality and cost, which is the only way that a small company that operates in a niche field like ours can survive," says Takayuki Ochiai, president and CEO of industrial fastener manufacturer, Ochiai. "We have stable demand because our products have diversified applications in various industries such as construction equipment, housing, and automotive. I truly believe that the cost and quality are the two major factors that allow us to prevail against harsh competition."

Harsh competition has also been a challenge for Japan's semiconductor industry. But as the nation has lost significant market share in the production of semiconductors, it leads the globe when it comes to semiconductor manufacturing equipment, thanks to companies like Tokyo Electron (TEL), which aims to invest ¥400bn (\$3.5bn) in R&D.

"Each 'new age' means new technologies and more investment in R&D to keep ahead of the curve. We pride ourselves on being one of the only companies in the world to always assure the best quality, and



Toru Nishido, President & CEO, Iwatsu Electric Co., Ltd.

the most advanced technologies," says TEL president, Toshiki Kawai.

"In order to be market leaders, we have enhanced the patterning activities in lithography, etching, singular deposition, and wet cleaning, and we are one of the only companies in the world to have these four elements in the production process. In addition, we have the largest worldwide share of EUV and coater developer manufacturing."

meistier corporation also excels in the field of semiconductor manufacturing equipment. Its unique strengths can be divided into two major categories, as explained by president, Seiya Kudo. "First is the ability to make proposals using technologies that we excel at, such as image processing AI," he says. "The second is our global support capability that maximizes the LTV (lifetime value) of field service equipment. A lot of semiconductor manufacturing equipment stays in use for more than ten years. Our goal is to improve the accuracy of such equipment and extend service life."

Cleaning is another vital part of the semiconductor manufacturing process and the field in which SCREEN Holdings has a strong market share. Having started as a printing business, SCREEN also supplies equipment to the PCB and electronics industries, and has recently leveraged its innovative capabilities to enter renewables and life sciences.

"Our business model, which is to create solutions together with our customers, whatever their needs may be, remains unchanged. Beginning with our printing business, we have always pursued this model," says president, Toshio Hiroe. "The same applies for our other business areas such as semiconductors or displays: we go to the markets



Tetsuya Nakayama, President, TRUSCO

where our customers are and we work together with them to find the solutions to their problems."

Moving to materials science: Nippon Carbon is one of the world's largest suppliers of carbon products to the semiconductor market, supplying around 60% of what is used by semiconductor wafer companies. "Our expertise is heat treatment, and as such we can propose C/C composite, a reinforced carbon material that prevents distortion, to our global clients," says president Takafumi Miyashita, adding that the company plans to invest more in R&D to meet the latest demands of the semiconductor industry. "Due to the higher levels of purification needed from the silicon semiconductor field, we are exerting more energy into our material R&D. Carbon plays a key role, but it is such a simple material, which compels us to increase our R&D strategy to offer more attractive proposals to our clients."

For its part, Nihon Parkerizing also counts heat treatment among its main strengths, with its rust-prevention materials and coating technologies used for a wide range of industries and applications, including components for electric vehicles (EVs). "In terms of chemicals for electronic components used in EVs, our clients require greater functionality, better heat treatment and greater accuracy. Luckily, we have the experience, the technology and the will required to answer all of their demands," says president, Mitsuru Matsumoto. "Furthermore, our products and services help clients attain higher sustainability. By providing chemicals free of hazardous materials, such as chrome-free chemicals, we contribute to the creation of safer industrial standards."

Also playing its part in environmental sustainability, Asaka Riken



Toshiki Kawai, President, Tokyo Electron Ltd.

operates in the extremely niche but increasingly important area of lithium-ion battery (LIB) recycling, as well as recycling of precious metals. "Today, we have the technology to recycle LIB in a safe and reasonable manner. While this technology is known to various companies, not all firms employ the same process. At Asaka Riken, we have developed our own LIB recycling technology and no other company utilizes the same technique," says CEO Yusaku Yukita.

"We are currently aiming to use LIB recycled materials for new LIB processes, which means that we aim to recover 100% of the materials from all the metals and components used in the production process."

While it is not involved in manufacturing, TRUSCO plays an important role in the manufacturing supply chain as a trading company supplying products to Japanese SMEs across a wide range of industries. Also operating as an MRO (maintenance, repair and operation supplies) wholesaler, TRUSCO has accelerated digital transformation to further enhance the quality of its services.

"One of our strengths is that we have a great digital network in terms of distribution. We even have our data centre set up within our headquarters," explains president, Tetsuya Nakayama. "I don't think there are any companies putting this much investment into digitizing their system."

"There are many ways for us to continue growing, like in MRO or direct delivery systems," he adds. "In this way, we are able to provide services that don't exist in the industry or the world yet and by doing so, we create greater value. We will always strive to be a company that is indispensable with our contributions to Japan's manufacturers."

Sharing the future: creating sustainable growth for business and society



"In the more than 150 years since our founding, SCREEN has experienced incredible growth and diversification. We will continue working to further deepen our proud history and constantly improve our corporate value."

Toshio Hiroe,
CEO & President,
SCREEN Holdings Co., Ltd.

From energy, semiconductors and electronics to pharmaceuticals and bio-sciences, there are incredible and transformative developments happening in these innovation-driven industries, and SCREEN Holdings is proud to be playing a fundamental role behind the scenes in all of them.



OMNITO Inkjet Printing System

Established as a printing company over 150 years ago, SCREEN produced Japan's first photographic glass screens in 1938 and throughout its history the company has sought to continuously refine technologies in its three core areas: surface processing, direct imaging and image processing.

SCREEN Holdings uses their proven technologies and combined expertise to innovate for a sustainable world.



These core technologies have formed the basis of SCREEN's successful expansion in the semiconductor, PCB, electronics, display and print industries, and more recently its moves into renewable energy and life sciences. Having opened its first overseas office in Los Angeles in 1966, today SCREEN has a presence in over 30 countries, including in Europe and North America, and is recognized as a leading global manufacturer of cutting-edge production equipment.

With a strong position in the field of cleaning equipment for front-end semiconductor production, including a 40% global market share in the single wafer cleaning field, company president, Toshio Hiroe, now aims to grow SCREEN's presence in the middle and back-end processes, through the development of new processes for cleaning, such as for new extreme ultraviolet lithography technologies.

"As the middle and back-end processes are getting smaller and more complicated, they require new cleaning technologies. I believe there are plenty of business opportunities out there," Mr. Hiroe explains. "Large-scale transformation is happening in every business field such as semiconductors, displays, or PCBs, and we are looking to find business opportunities in this transformation."

Amid growing demand for batch cleaning equipment in several areas of semiconductor manufacturing, SCREEN has the answer with FC-3100, which cleans multiple wafers simultaneously in a bath, as opposed to spraying them individually. "Batch cleaning is necessary for some specialized applications," Mr. Hiroe explains. "For example, for

the NAND memory's deep contact, which has more than 120 layers, the batch cleaning process is better as the solution needs to permeate into a small structure. That is just one example, but there is still a certain demand for that batch-type cleaning technology and we have 70% of the market technology."

Supporting the green revolution forms another pillar of SCREEN's vision. The company began producing low-cost fuel cells in 2013, while its collaboration with Tokyo Gas on a water electrolysis cell stack system targets the production of clean low-cost hydrogen in the near future.

In the field of life sciences, SCREEN aims to utilize its three core technologies, surface treatment, image processing, and direct imaging, to support new innovative healthcare solutions. "Through our market research, we saw great

growth potential in the life science market," explains Mr. Hiroe. "We therefore decided to enter the regenerative medicine field and to apply our imaging technology to this unprecedented area."



SU-3300 Single Wafer Cleaner

In the more than 150 years since its founding, SCREEN has experienced incredible growth and diversification, and over the next century the company will continue to advance its technologies to create sustainable growth for its clients, society and the environment.

SCREEN

INNOVATION FOR A SUSTAINABLE WORLD

www.screen.co.jp/en

Mastering evolving technology to create a future we can be proud of for the next generation

Over the years, meistier corporation has developed, manufactured and set up many kinds of manufacturing equipment for customers around the world, mainly in the semiconductor industry. In recent years, we have provided new value to our customers by introducing our own in-house developed image processing AI, IoT systems, and robot solutions.



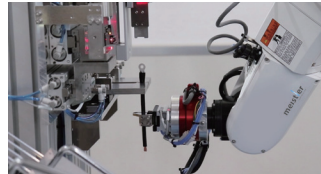
Global Field Engineering Support

Delivering cutting-edge technology from Kumamoto, Japan, to the rest of the world, meistier corporation provides comprehensive support to maximize equipment life-time value, constantly improving our expertise to meet the needs of local customers.

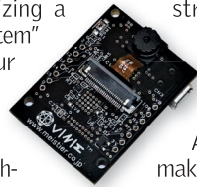
Through a fusion of manpower and ICT, we can efficiently connect our Fab support engineer teams around the world with customers regardless of time or distance. This ensures that the most suitable engineers are always available to respond to customer requests and provide speedy and timely support.

By pursuing and utilizing a "Smart ICT Support System" that makes full use of our global network of offices, the skills of our experienced employees, and also big data, we can work together with our customers to create a smart society of the future.

Over the years, meistier corporation has focused on accumulating production technology, equipment technology, system integration technology, and maintenance technology, while always



Cutting-edge Smart System Creation



Imaging AI Technology Capabilities as a core competency

striving to increase our know-how to best meet local customer needs.

We also use our own in-house developed IoT, AI, and robotics; and by making full use of these technologies, we will contribute to identifying and solving issues related to the customization and innovation of production sites that accurately meet society's needs.

We can define the "six senses" as the five human senses of sight, hearing, touch, taste, and smell, plus "perception/prediction", and we aim to replicate and even surpass these six senses through our image processing technology. In 2020, we started selling our own brand of image processing software, VINIE, which embodies this AI technology. This product is already being used in

various fields such as semiconductor manufacturing equipment and communicative robots.



"We are now working to strengthen our new Global Engineering Support system."

Seiya Kudo, President and CEO, meistier corporation

meistier
CORPORATION

www.meistier.co.jp

The pioneer of electrostatic chucks

Creative Technology is leveraging its pioneering semiconductor handling technologies to expand into new fields such as robotics, food and textiles.

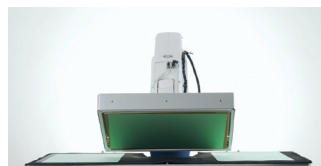


In a field as constantly evolving as semiconductors, innovation becomes not just an advantage but a necessity to survive. Japan's Creative Technology has been at the forefront of the industry for nearly 30 years, and today uses its culmination of past technologies to provide an all-encompassing one-stop shop for electrostatic chucks.

By truly understanding the functional side of electrostatic chucks, Creative Technology provides a unique service for its clients. As president Yoshiaki Tatsumi explains: "Making full use of our knowledge and experience so far, we strive to come up with the best solution from every angle, starting from design to production."

By way of example, the company is able to apply its chucks not only in the semiconductor field, but also in other applications such as robotics and food products, to name but two of the wide range of innovative uses Creative Technology has developed for its chucks.

Indeed, Mr. Tatsumi reveals that electrostatic technology can be widely applied in the textile industry where "one electrostatic automatization system can replace the labor of 100 people."



Indeed, Mr. Tatsumi reveals that electrostatic technology can be widely applied in the textile industry where "one electrostatic automatization system can replace the labor of 100 people."

"Our approach is to focus on semiconductors and this is the default priority for business expansion overseas."

Yoshiaki Tatsumi,
President,
CREATIVE
TECHNOLOGY CO.



Creative Technology's singular skill set has led to the company expanding to Singapore, the United States, Taiwan, Germany, and South Korea, where it is creating a new state-of-the-art plant. Creative Technology works with its overseas partners to fully understand the particular needs and traits of the local market before creating tailor-made solutions.

This constant search for innovation encouraged Creative Technology to move into the B2C field, developing products from wearables to drones, and

this expansion will help the company find even more synergies between electrostatic chuck production and the product's material applications for years to come.



CREATIVE TECHNOLOGY

www.creative-technology.co.jp/english

Seiwa Optical: The machine vision and inspection equipment specialists

Leveraging its excellent reputation for quality optical solutions in the semiconductor and industrial equipment fields, Seiwa Optical is also now expanding its innovation into life sciences.

The history of Japan's optical equipment manufacturers can be traced back to World War II, during which these companies provided scopes for the munitions industry. In the post-war period, focus shifted to the development of microscopes, industrial measuring instruments and electro-optical devices, before eventually expanding to semiconductors and, more recently, optical devices for new technologies such as the Internet of Things, automation and artificial intelligence (AI).

As such, optical manufacturers have played a very important role in Japan's industrial development, with Seiwa Optical being one of the chief players in the industry for more than seven decades. "Seiwa Optical was founded in 1947. To sustain the business over such a long time, it has been necessary to manage it with a balance between traditional inheritance and modern innovation," says company president, Isao Okazaki. "Many long-



Assembly and adjustment of Projection Exposure Lenses

at an ever-increasing pace, machine vision has become another core business, with the company's range of products in this field including image input equipment (in which telecentric lenses and high-definition cameras play an important role), high-uniformity illumination systems, auto-focus systems, XYθ stages, image processing systems and software.

"The application of Industry 4.0 in high-tech companies has become more and more common," says Mr. Okazaki. "Our optical systems are related to optical technology (inspection, positioning, etc.), and these are essential for automated production lines through the introduction of AI, which is necessary for smart factories."

In the industrial equipment business, Seiwa Optical develops production and inspection equipment that is indispensable to production lines for semiconductors and various electronics devices and components, including microLED displays, all-solid-state lithium-ion batteries, laminated capacitors, and PKG substrates. "These are the products that we are focusing on as they have great potential for overseas sales," Mr. Okazaki adds.

Life sciences has recently become the fourth pillar for the company, which identified Japan's weakness in the field of medical equipment as the country relies heavily on imports. "What I told the government is that we foresee a medical revolution," explains

Mr. Okazaki, with Seiwa Optical subsequently managing to secure government funding to make laser processing and inspection products for the medical and life science fields. "We hope that this fourth business pillar will strengthen us and lead us to becoming a 100-year company," he adds.

As a leader in a range of niche high-tech areas, Seiwa Optical's approach to R&D combined with its OEM (original equipment manufacturer) business model has been key to the company's success. "Our approach to R&D is to work in a tight



In-house designed and assembled Microscope Objective Lenses

knit relationship with our customers," says Mr. Okazaki. "We provide OEM customized technology specifically for our customers' needs, and we also make their black box units to provide unique technology for our customers to win and grow the business. This is how niche top companies strategize."

With wholly owned subsidiaries in seven countries (Japan, USA, Germany, Korea, Taiwan, China, and Singapore) and 12 distributors in



NIR Digital Microscope for Wafer Internal Observation

neighboring countries, Seiwa Optical continues to grow its business internationally and is looking to utilize joint ventures, M&As and co-creation partners to expand both its technological capabilities and geographical reach.



"We will continue to strive with passion to create innovative technology based on our experienced core optical technology."

Isao Okazaki,
President,
SEIWA OPTICAL CO., LTD.

"When we expand overseas, we focus on research and development to suit the circumstances of each country. Then we work with inno-



Machine Vision Lenses designed to bring customer's equipment to the world's best

vation and high technology, and as a result we have a wide variety of products," says Mr. Okazaki.

"We want to contribute to the development of the world economy by developing and selling valuable products that can respond to the circumstances of each country on the planet. To do so, we must keep up with global trends but at the same time, we have to maintain the basic principles of the company along with what we have gained through our experiences. The core of our products will continue to be optical engines.

In the next five years, we expect to see significant advances in technology. Hopefully, we will not only be a part of them, but also be a worldwide frontrunner to lead the core optical instrument field."

SEIWA OPTICAL

www.seiwaopt.co.jp



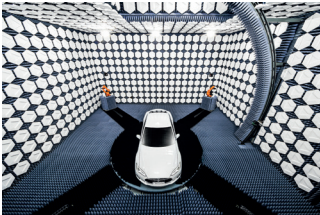
Exposure and inspection equipment for semiconductors

standing companies are pursuing uniqueness and an uncompromising attitude rather than profit, and we are in that category."

Today, Seiwa Optical's three main business segments are optics, industrial equipment and environment. In the past, the company mainly manufactured equipment for display panels, but has since shifted to semiconductor equipment. Meanwhile, with automation in the industrial field evolving

TOYO: Worldwide Quest for Precision

Founded in 1953, TOYO Corporation is the leading provider of advanced measurement instruments and systems in Japan. The company is on a mission to provide original solutions to emerging industries such as automotive, telecommunications, and Electromagnetic Compatibility (EMC) around the world.



Automotive OTA Testing System

TOYO emphasizes its commitment to creating original, innovative and high-quality solutions and delivering great pre and after-sales service and satisfaction for customers across its business units. This approach provides a formidable business model for the company.

One area presenting an advantage of TOYO's diverse portfolio is the automotive sector. In the past, test strategies were focused on engine noise and

vibration. These days however the industry has turned its attention to connected cars, batteries, and electric motors. This seismic change necessitates the development of an entirely different set of test and measurement systems. The company is well-positioned to support the development of this key industry due to the bold and transformative steps it has taken.



"Our approach is to leverage different technologies in innovative ways to create market-based solutions."

Toshiya Kohno, President & CEO, TOYO Corporation

TOYO customers depend on its advanced OTA (Over the Air) testing system to build next-gen automobiles. To ensure the reliability and integrity of such vehicles, TOYO's test system conducts vehicle communication performance testing in a virtual environment that provides real-world measurements. Ensuring accuracy and stability during a test, the system delivers reliable results. Meanwhile, the system utilizes an ultra-fast patented algorithm, adopted by the 3GPP standards body, to improve test cycle times and drive down costs.

Another featured solution is its patented SYNESIS packet capturing system, which captures packets without loss up to

200 Gbps for any Ethernet link speed (1-100 Gbps), and also has the capability to replay the captured data in test environments for verification. Furthermore, its portability allows for rapid deployment in a lab, an offsite location, and a data center as a temporary big data packet collector. The unit is self-contained with its own monitor, keyboard, and all the necessary software.

TOYO takes the approach of leveraging the different technologies in innovative ways to create market-based solutions.



TOYO Corporation

Quest for Precision

www.toyo.co.jp/english/
www.toyotechus.com

Right MFG: Combining *monozukuri* and *kokorozashi*

With over 70 years of experience, Right MFG, a Japanese company specializing in the manufacturing of medical & optical instruments and semiconductor manufacturing equipment, relies on two words to define its very essence: '*monozukuri*', the Japanese craftsmanship philosophy at the heart of its manufacturing, and '*kokorozashi*', which represents will, motivation, initiative or a sense of purpose through contributing to society, which is taught as the Japanese spirit.

As an original equipment manufacturer (OEM), Right MFG provides a range of products and services for its clients, from design to

manufacturing as a "*Monozukuri Specialist*" for OEM export, with the company boasting original brand products that are revolutionizing their respective fields. The unique N2 purge system forms the basis of its new functions in the semiconductor handling equipment field, while its AVG (with lifter) guarantees optimal efficiency in replacing conventional conveyor production lines.

One area of Right MFG's portfolio which is really flourishing is its Righton Brand, more specifically its product line of ophthalmic instruments: the Handheld Autorefractometer Retinomax Series and Acomoref.

Retinomax is the world leader for this handheld type of technology, being able to measure human eye refraction and corneal curvature utilized for telemedicine. Acomoref, on the other hand, boasts a function to measure Accommodative Microfluctuation to check eye fatigue caused by computer screens or smartphones. Two revolutionary products to help people in the digital age who are suffering from eye problems as well as those who just need a quick and stress-free vision check-up.

Instigating such cutting-edge technology requires a symbiotic relationship with its customers. Working closely with its clients allows Right MFG to be informed throughout the entirety of any product life cycle: from the R+D stage to product production, which is an integral part of *monozukuri*. "I strongly feel that we should not just keep on doing our *monozukuri* based on what we already know and have," says Osamu Tsunoda, president of Right MFG.

With its *monozukuri* being underpinned by *kokorozashi*, Right MFG simply does not allow itself to depend on former successes,



"I recognize the importance of establishing very strong *monozukuri* in Japan, because *monozukuri* itself is also changing."

Osamu Tsunoda,
President,
RIGHT MFG. CO., LTD.

instead, the company adheres to a forward-looking perspective while accomplishing its single-minded mission: to manufacture high-quality products while providing the world with a contribution that really counts.



<https://rightmfg.co.jp>



Semiconductor N2 Purge



Acomoref



Retinomax

Steely resolve: Krosaki Harima focused on ESG best practices

Having supplied the steel industry for more than a century, today Krosaki Harima Corporation is focused on expanding its global operations in line with Environmental, Social, and Governance (ESG) best practices.

Since it was established in 1918, Krosaki Harima Corporation has played a vital role supplying quality materials to Japan's main industries, especially the steel sector. Today, the company is mainly engaged in the manufacture of refractory materials, operating through its three main business segments: Refractories, Furnaces, and Ceramics.

"There is a close relationship between the refractories and furnace segments in particular. In order to install an energy saving furnace, appropriate refractories are essential," explains Kazuhiro Egawa, President of Krosaki Harima Corporation. "In addition to this, in our traditional business segment, we are strengthening our advanced ceramics business to supply the semiconductor industry primarily, but also the aerospace and medical industries. We have unique advanced ceramics technology which shows high performance and function and we are expanding this business area not only in Japan, but also overseas."

Alongside the global expansion of its ceramics business, the company already has several refractory companies worldwide, mainly driven by the significant demand in China and India for steel production.

"In Europe we are supplying not only the steel industry, but also to the cement market," says Mr. Egawa. "The refractories for cement kilns in Europe are selling strongly and can be exported to Latin America and Eastern Europe. Very recently, we entered into a technological and distribution agreement with ArcelorMittal Poland. This means we can now supply all types of refractories to all of the European steel manufacturers through a combination of our worldwide Krosaki Harima Group products."

As part of this global expansion strategy, Krosaki Harima is seeking further joint ventures with other reliable partners worldwide, having also recently entered into a distribution agree-



ment with a Brazilian company, and is currently focusing on the United States as a priority market. Implementing the company's core corporate policy to "produce locally and supply locally", the Group is now supplying refractories to almost all the steel manufacturers in the United States.

One product proving particularly popular in the Group's core global markets is NEXCERA™ zero thermal expansion ceramics, which minimizes the thermal expansion of the material when under heat. "This is valuable not only in the semiconductor industry to make finer semiconductors, but it is also needed in the production of satellites and measuring reference instruments," explains Mr. Egawa. "Our advanced ceramics

are also a part of instruments that are being used in the effort to test and prevent the spread of COVID-19, so I think there are great opportunities to expand our business here."

This is not the only valuable contribution Krosaki Harima Corporation is making towards an environmentally-friendly society in its role as a socially-responsible business, says the company president.

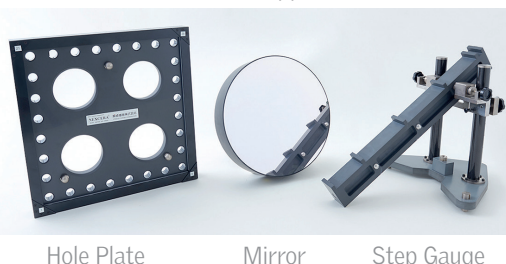
facturers can produce very high-quality steel for ultra-lightweight automobiles as well as electric vehicles (EVs). We now have the biggest market share for this type of product which can produce ultimate clean steel."

Another way Krosaki Harima is helping the environment is in the development of energy saving furnaces which can recover 50-70% of the energy emitted in exhaust gases. "In the case of a 1,200 degrees celsius furnace that represents a deduction of heat storage of 64% as well as a reduction of radiant heat by 45%, this contributes greatly to energy saving," says Mr. Egawa. "We additionally have cooperated with partners to install 35 biomass power generators, not only in Japan but also in other Asian countries, and I see this as another big opportunity for us to expand our business worldwide."

Besides its clear environmental focus, the business is increasingly determined on improving the diversity and inclusion of its workforce in line with international corporate governance best practices. "We are increasing the number of non-Japanese as well as female employees and delegating a lot of work to younger generations. As a business, we're not concerned with which generation, gender or nationality somebody is. We're more concerned about who can take responsibility and fulfil their duties best," says Mr. Egawa.

"We respect each person and the culture and traditions in which they work, but at the same time, in order to produce high-quality materials we request them to follow our company policies. As long as our employees do that, we believe they can contribute to society and gain respect among their community, which will lead to a prosperous future for everyone."

NEXCERA™ Applications



"We are today helping to produce very clean steel. For example, in the continuous steel casting line, with our Alumina Graphite material refractory, steel manu-

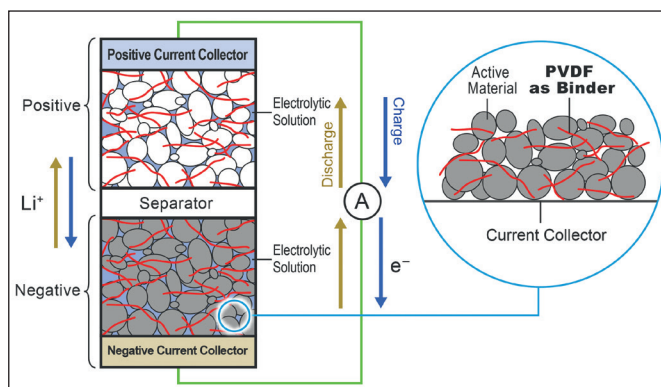
Kureha to meet growing lithium-ion battery market demands

Kureha Corporation is a leading diversified chemical products manufacturer. Since its inception in 1944, Kureha has constantly sought to support and enhance an ever-changing society through its original technology and strong corporate culture.



Yutaka Kobayashi,
President and CEO,
Kureha Corporation

Kureha Corporation has recently announced its decision to build a new polyvinylidene fluoride (PVDF) plant at its wholly owned subsidiary in the Jiangsu Province of China. To be completed in Spring 2024, Kureha's new 10,000-ton production facility will allow the company to decisively improve its capacity to address the increasing requests for PVDF among its customers. The plant's ca-



Structure of lithium-ion battery (sourced by Kureha Corporation)

capacity will eventually reach 15,000 tons per annum, aiding Kureha's mid-term plan to seamlessly align with market growth and increase its revenue in the PVDF business.

PVDF, a binder material in lithium-ion battery (LIB) manufacturing, is experiencing fast-growing demand in the LIB-powered automobile sector as part of many countries' environmental initiatives. Kureha's

PVDF currently enjoys a dominant market position in the LIB segment, meaning the company's future capacity expansion will no doubt bring excellent long-term rewards.

With a presence in countries and regions such as the USA, UK, EU, China, Vietnam and Australia, Kureha also understands the need to expand its business globally. Kureha homes in on local knowl-



KF Polymer, Kureha's
Polyvinylidene Fluoride

edge for its product development and differentiation. President Mr. Yutaka Kobayashi outlines the company's overseas approach: "We expect to see more autonomy at our regional operation bases, including strategy planning and execution, while the headquarters provides the necessary resources."

This holistic approach allows Kureha to build trust with all its customers as well as providing the company with the requisite information needed to tailor its products and address its customers' changing needs before the competition. The future is certainly bright for Kureha Corporation.

KUREHA
www.kureha.co.jp/en

Innovative recycling for the lithium-ion batteries of the future



"We aim to create a system that can stop overusing materials and limited resources by creating a circular and virtuous economy."

Yusaku Yukita,
CEO,
ASAKA RIKEN CO., LTD.

The United Nations' Sustainable Development Goals (SDGs) have become a key objective in many companies' green initiatives.



However, it takes those truly focused on creating sustainable change for transformation to occur, and lithium-ion battery (LiB) recycler Asaka Riken is a perfect example of just that.

Founded in 1969, the company possesses unique and protected technology to recover valuable elements from LiB, which are set to be used exponentially more as the world transitions towards electric vehicles.

As Asaka Riken President Yusaku Yukita explains: "We aim to create a system that can stop overusing materials and limited resources by creating a circular and virtuous economy."

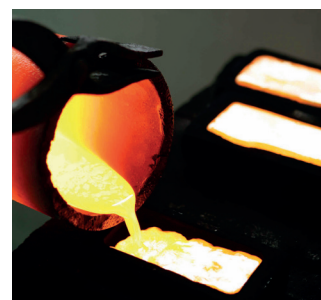
Whilst other recycling companies often use rough processes

such as crushing and burning to recycle LiBs with the goal of extracting metals like nickel, Asaka Riken is aiming to be able to recover 100% of the materials in LiBs to then be reused in other LiBs.

Asaka Riken's focus on sustainability is reflected in the company's aim to not simply develop the technology to achieve 100% recovery itself, but rather look for partners to cooperate and co-develop this technology with.



In terms of this co-development, Mr. Yukita says: "Our ideal business model is being invited rather than competing."



Now established as the forerunner in LiB recycling, Asaka Riken's eyes are firmly set on the future, with the company recognizing the need for flexibility and innovation as the LiB industry rapidly develops. This ability to adapt is set to help Asaka Riken as it expands its network of co-creators and cooperators through Asia, Europe, and North America.

ASK Asaka Riken Co., Ltd.
www.asaka.co.jp/english/

Exploring the potential of carbon

A huge exporter and supplier of carbon products to the global semiconductor industry, Nippon Carbon has a history of introducing innovations to the Japanese and global markets.



"Our company's strategy moving forward is to contribute to the business of our global customers in terms of high quality, cost, and delivery (QCD)."

Takafumi Miyashita,
Representative Director & CEO,
Nippon Carbon Co., Ltd.

For more than a century, Nippon Carbon has been a pioneer in the carbon industry, having succeeded in industrializing graphite electrodes for electric arc furnaces, whilst also introducing carbon fiber products for the first time in Japan. With these innovations, the company has continued to devote its experience and know-how in the field of carbon and graphite by developing value-added carbon products that meet changing societal and industrial needs.

In recent years, however, Nippon Carbon and the Japanese carbon industry have faced increased regional competition. In order to enhance its competitiveness, the company is today proactively exporting insulators for the heat treatment field, targeting the US, Europe, and China.

"According to my estimations, I believe that Nippon Carbon is the greatest manufacturer and exporter of insulators in the heat treatment field," asserts the representative director and CEO of Nippon Carbon, Takafumi Miyashita.

Indeed, Nippon Carbon is today a huge exporter and supplier of carbon products to the global semiconductor market, supplying around 60% of what is used by semiconductor wafer companies. One of the reasons why the company is so strong in this market is because it

supplies all three components demanded: insulators, C/C composites, and carbon specialty materials. "However, I imagine that the quality of Chinese competitor's products in this market will start to get better as time progresses and therefore, we are striving to not lose out and must continue to expand and improve our quality even further. That is our general direction," says Mr. Miyashita.

In recent years, we have seen a big change in the materials used for semiconductor wafers because of their applications. Wafers that were traditionally made from silicon are increasing, especially for power electronics. Likewise, compound semiconductors such as gallium nitride or silicon carbide are creating different needs in manufacturing, which makes it necessary for producers to rethink their supply chain and materials. So, how has Nippon Carbon been able to adapt to these changes?

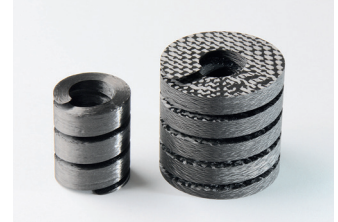
"The semiconductor is the key when you are starting to incorporate IoT into various products," says Mr. Miyashita. "In Japan, there is a shortage of semiconductors and semiconductor makers are indicating that it is a challenge to adequately provide for manufacturers that need them. Due to higher and higher levels of puri-



Artificial graphite electrode



Crucible for semiconductor crystal growth



C/C composite coil spring

fication needed and demanded by the silicon semiconductor field, we are exerting more energy into our material R&D. Carbon plays a key role, but it is such a simple material, which compels us to increase our R&D strategy to offer more attractive proposals to our clients."

In terms of its other innovative products, silicon carbide (SC) continuous fibers like Nicalon and High-Nicalon have been widely adopted for their various characteristics and durability by the aerospace field.

"Nicalon is now being manufactured by NGS Advanced Fibers Co., Ltd, which is part of our subsidiary and a joint venture between Nippon Carbon, GE Aviation, and SAFRAN. There are only two companies in the world that can create SC continuous fibers. Nicalon's greatest application is in jet turbines," explains Mr. Miyashita. "The reason why it works so well is that

it does not become distorted and also, it is lightweight, meaning it creates higher levels of fuel efficiency and safety – which is obviously very important for aerospace. I believe that this product is definitely going to be on the rise even in the post-Covid world, with the increased awareness and efforts on cutting down CO2 emissions and becoming more fuel-efficient."



Silicon carbide fiber is used for jet engines



Carbon cloth is used as a rocket nozzle insulator



Nippon Carbon Co., Ltd.

www.carbon.co.jp/english/

Nihon Parkerizing: fine-tuning and creating cutting-edge technology in increasingly diverse fields

Nihon Parkerizing, leader in the field of surface modification technology, celebrated its 90th anniversary in 2018 and has no plans to slow down its pursuit of new business ventures in new markets.

Over its long history, Nihon Parkerizing has mainly tailored itself to the core pillars of the Japanese economy, namely the steel and automotive sectors. However, when a company's very lifeblood is a continuous enhancement of its technology, the pursuit of new areas for its products becomes a logical end and an indubitable strength.

Two of Nihon Parkerizing's products which are currently helping propel the company into new pastures are *Chidori* and *Pal-Feel*. Both are the culmination of



Long-lasting antiviral and antibacterial spray, Pal-Feel

"We will continue to sharpen our technological capabilities to provide high-quality products and services globally while actively seeking solutions for social issues."

Mitsuru Matsumoto,
President & COO,
Nihon Parkerizing Co., Ltd.

the Japanese term "*suriawase*," translated as "*fine-tuning*".

President Mitsuru Matsumoto outlines the company's innovative spirit: "We have always been ahead of the times. Our corporate culture has always been one of 'challenging new business areas,' so for us, venturing into new fields is an integral part of our identity."

Chidori is an electric scalpel widely praised by surgeons and medical professionals alike. "When surgeons

employ a regular scalpel, blood and human body emissions routinely get stuck to the metal blade," Mr. Matsumoto explains. "But by utilizing our surface modification treatment on an electric scalpel, we can minimize the body tissues and blood particles that get stuck to the blade, thereby making the cutting process much smoother."

Pal-Feel, on the other hand, is an antibacterial spray for bacteria, fungi and viruses, eliminating more

than 99% of these organisms. The sprayed area forms a very thin film after drying and has long lasting protective properties. This remarkable new product neatly fits inside another of Nihon's predominant aims: that of developing functional and high-quality products within the concept of "making daily life more comfortable".

As Nihon Parkerizing approaches its 100-year anniversary and new fields open up to its

CHIDORI®
Disposable Active
Electrode

technology, one of its core fortes shines through time and time again - utilizing its base technology and successfully applying it to different business areas.

NIHON PARKERIZING CO., LTD.
www.parker.co.jp/en

The importance of adding the final touch to sophisticated machinery



"We take charge of customizing and developing specialized paints to meet the customers' needs."

Koji Shinohara, CEO,
EDOGAWA GOSEI CO., LTD.



EDOGAWA GOSEI CO., LTD.
www.edog.co.jp/english

EDOGAWA GOSEI specializes in producing conductive and cutting oil resistant paint reliable enough to protect Japan's busiest machinery.

Japanese craftsmanship goes far beyond simply skilled workers, it is a philosophy which encompasses every aspect of the production process, including the upkeep of machinery. These machines working continuously must be created from high-quality materials in order to perform optimally, and EDOGAWA GOSEI ensures manufacturers' machines are coated in outstandingly resistant, specialist paint.

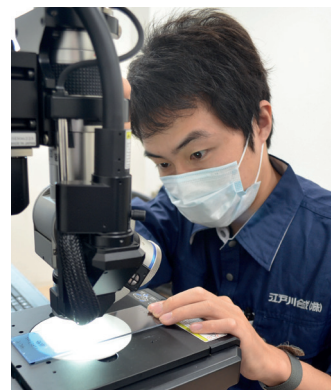
Founded in 1935, EDOGAWA GOSEI's innovative EPOLITE paint provides a coating which is resistant to cutting oil, and the company has developed paints and coatings for a wide range of industries, from semiconductors to healthcare. President of

EDOGAWA GOSEI, Koji Shinohara, explains the company's philosophy is based around a combination of "the spirit of craftsmanship with a hidden sense of hospitality".

EDOGAWA GOSEI also understands the need to work towards the United Nations' Sustainable Development Goals, with its AQUA RECOAT, a water-based paint for recycled tires created to reduce waste rubber, and the development of its eco-conscious LUBRI-ONE lubricating paint.

The reliability of the company's products has led to it supplying paint for a special project to provide disaster victims with heat, as well as for vital hospital equipment such as MRI and CT scan rooms.

Understanding the environmental needs of the market has helped the company to expand to Thailand, from where it is looking to grow throughout South-east Asia through the forming of fruitful business alliances.



Technical developer checking the smoothness of the painting film in μ units

Optimal solutions for ever-changing industries

IWATSU ELECTRIC is constantly striving to create new value and contribute to enriching society through a diverse array of communications systems, printing, and test & measurement equipment.



IWATSU Head Office in Tokyo

We live in a world that is shaped by the speed of science, technology, and communication. Companies today face a myriad of challenges, including flexible product development that is in sync with the state of the market, increasing sales, and making product availability more efficient and more sustainable.

IWATSU ELECTRIC, whose advanced technology supports businesses with these increasing demands placed upon them, offers high-caliber tech solutions

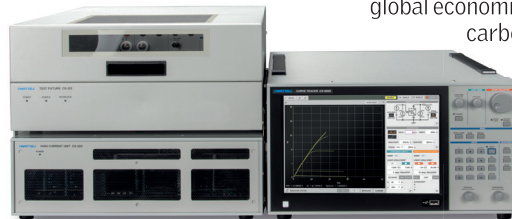
to its customers through a fusion between hardware and software systems development.

"Our goal is to further the satisfaction of our customers through offering the best solutions. IWATSU is constantly striving to create new value and contribute to enriching society," says Toru Nishido, President of IWATSU ELECTRIC.

"Our three main business pillars are communication systems, printing systems, and test and measurement systems, and with the adoption of IoT we are now able to combine the strengths of these three pillars together."

The company's contribution to social, economic and scientific fields includes the Super-Kamiokande, a measuring device developed for the neutrino observatory; and the next-generation

detector Hyper-Kamiokande, a gigantic detector used as a microscope to observe elementary particles, and also as a "telescope" for observing the Sun and supernovas using neutrinos.



CS-8000 Semiconductor CurveTracer

"The Super-Kamiokande won a Nobel Physics Award, and there is strong demand from research institutes as it is an unbreakable device that does not require maintenance, as it has to be constantly working properly



DS-8000 Digital Oscilloscope

in order to extract neutrinos," explains Mr. Nishido.

IWATSU ELECTRIC is also active in sustainability and energy efficiency – a sector set for significant growth as Japan and global economies strive to reduce carbon emissions. "Our DS-8000 and CS-8000 measurement equipment (pictured above) have been developed to test SiC and GaN devices for

high efficiency," says Mr. Nishido, adding that the company aims to utilize its advanced technologies to enter other new fields as well.

IWATSU
www.iwatsu.co.jp/ENGLISH

Giving shape to ideas through *monozukuri*

To be chosen by the customer is no easy task, but thanks to Chuo Koki's 75 years of experience in responding to its customers' needs in the machine tool industry, this becomes possible.



Anjo Office

In our daily lives, metal products are used in a variety of settings, but the suitable tools are needed to create their final form. Since its establishment in 1946, Chuo Koki has been heavily involved in this important process, providing the necessary machining accuracy in a timely manner for the required applications.

Because Chuo Koki is a small-to medium-sized business, it is able to act with the mindset of "customer first". To achieve this, the company has adopted "horizontal integra-

tion" to provide one-stop services, from product development to sales as an integrated service.

"Our goal is to be chosen by our customers, so we need to support them. We aim for prompt delivery and strive to deliver value-added products," says president Yasuhiro Minoura of the company's policy.

"Our business is focused on responding quickly to our customers' needs, delivering products they demand."

Yasuhiro Minoura,
President and Representative
Director, Chuo Koki Co., Ltd.



Tapped hole automatic inspection machine

At the core of Chuo Koki's business are the recently established "Sales Innovation Division" and the "Metrology Solution Center", which are dedicated to investigating and developing new products. Establishing these departments has enabled the company to quickly respond to customer needs.

Many of Chuo Koki's custom-



Automatic Guided Vehicle (AGV)

ers have a large share of the global market. To meet the needs of these customers, Chuo Koki is proud and passionate about using its extensive partnerships to guarantee the latest information, respond quickly to inquiries, and support the design and development of new high-precision tools.

Moving forward, the company will continue to channel its strong ability to discover and understand its customer needs and then provide innovative ideas and solutions for those needs.



Clean Create Challenge

中央工機

<http://chuo-koki.co.jp/eng>

Lighter cars for a brighter, greener world

Daiwa Kasei is innovating its products to support the manufacture of lighter, more sustainable vehicles.



Many of Japan's renowned automotive manufacturers are today dedicated to making more lightweight vehicles in the pursuit of greater sustainability, particularly as the industry transitions to electric cars which can be significantly heavier than internal combustion vehicles.

To make these lighter vehicles, there have been some significant changes in the materials now favored, with heavy metals like steel today gradually being replaced by materials like aluminium and magnesium. This trend has impacted on the business model of not just the

car makers, but the auto parts industry too.

"We are trying to produce auto part products that can be applied to multiple types of material, but still function in the same way," explains Eiji Kojima, President of Daiwa Kasei, one of Japan's most prominent auto parts manufacturers and member of the Kojima Industries Corporation.

"Our main products are fastening components, such as clips and clamps which fasten two car



components together, so when we talk about changes in the materials in car manufacturing, that means the changes in material of these mating parts too. We also have had previous experi-

ence with this kind of change before, and as we move into the new mobility society with low and zero-emissions vehicles, this change is happening again."

With Daiwa Kasei geared to support this positive transition through its products, the company is also eager to make a difference through its own environmental impact – a philosophy that runs deep in its corporate DNA.

"The founder of this company, my grandfather, used to purchase parts of the iron that is wasted from Toyota's production line to make our products," says Mr. Kojima. "One of the quotes he left to us is that we must 'consume the life of the object'. If we keep this in mind for Japan's zero-emissions target, that means we must consume all the energy that is generated by our manufacturing process. In our factory, we are already working on efforts to do that."



"We are trying to produce auto part products that can be applied to multiple types of material, but still function in the same way."

Eiji Kojima, President,
Daiwa Kasei Industry Co., Ltd.



<http://daiwa-kasei.co.jp/>

Touch and go: the future of automotive touch panels

For almost 40 years, SHOEI has been creating products that have since become industry standard.



"Contribution to the society through *MONOZUKURI*."

Satoru Horikawa,
President and CEO,
SHOEI CO., LTD.

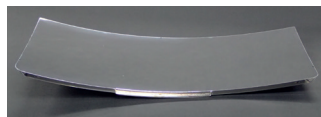
Cars are quickly evolving from metal shells built for simple transportation into advanced computers on wheels. One of the most important aspects of this evolution is how the user interacts with the technology, and that is where SHOEI's innovative touch panels come into play.

SHOEI has been able to stay ahead of the latest trends in the industry. For example, the company sourced high-grade German wide plate glass and applied industry-leading technology, including

customized wiring systems and white resin dot spacer printing to give a resistive feeling. SHOEI's passion for innovation is illustrated by the company's development of automotive HUDs (Head-Up Displays) with 3D technology and its work on Coca-Cola's vending machines in Japanese train stations.



Capacitive Touch Panel
with Decorative Lens
(plastic plate)



HUD Plastic Aspherical Mirror

"We are looking five to ten years in the future, and this perfectly aligns with R&D, which is really about predicting what the industry is going to be in a certain timeframe," SHOEI president Satoru Horikawa explains.

This focus on developing the products of the future is informed by seamlessly communicating custom-



Cu Mesh In-Mold Touch Panel

er requests and needs from sales to development and manufacturing, a process which has driven SHOEI's success for almost 40 years.

The company's forward-thinking R&D has enabled it to establish itself in the United States and Germany, from where it hopes



Resistive Touch Panel
(glass-glass model)

to expand throughout Europe via joint ventures with other innovative companies that understand the needs of the local market.

As SHOEI continues with its development of the products of tomorrow, be it augmented reality in its 3D displays or branching into the drone industry, it hopes to be able to further contribute to society through its high-performance manufacturing.



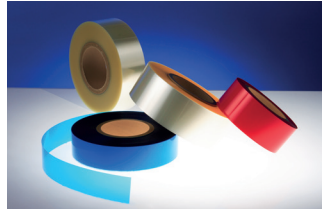
SHOEI

www.shoei-t.co.jp/en

Constant innovation to breathe new life into film for future applications

Higashiyama Film, with a presence all over Asia and over 70 years of experience as a maker of polyester film-based materials, doesn't believe in resting on its laurels.

Having won the full confidence of clients from across the world with its high technological competencies and high-quality products, Higashiyama Film has once again been displaying its knack for effortless adaptation to the changing nature of the times, while never neglecting existing market needs.



Clean Sepa®

Takashi Kameshima, president, sees and explains the firm's core focus clearly: "We respond flexibly and promptly to client and market needs. Everything from prototyping and testing to post-production is conducted in close collaboration with the customer to ensure the best fit solution to their needs."

The jewel in Higashiyama Film's crown is its development laboratory within the R&D department, which allows the com-

pany to work on diverse films as and when required, with one eye always firmly on the future. Current areas of research include anti-reflection, anti-glare films, and films for flexible displays as well as films with anti-fingerprint properties (Easy-To-Clean).

When a company listens to its customers and creates its values alongside them, it can feel safe in the knowledge that it will endure whatever lays ahead, and



Leftside: AR film
Rightside: Normal PET film

Higashiyama Film, with innovation and *monozukuri* at its core, has a bright future indeed.



"One of the demanding themes among several enhancements and new features that we are currently researching is improved anti-reflection properties. This will be an important factor in the future growth of the Higashiyama Film business."

Takashi Kameshima,
President,
Higashiyama Film Co., Ltd.

team
HYNT
www.hynt.co.jp



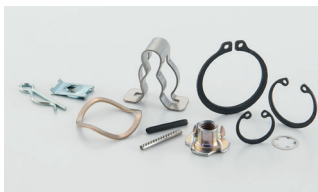
HYNT Lab. (R&D Center)

To unwaveringly meet customers' needs while advancing current technologies requires an innovative company culture and Higashiyama Film certainly has that.

Industrial fastener maker in pursuit of "limitless advances"

With demand driven by the global automotive industry and the transition to electric vehicles, Ochiai is currently advancing with establishing its overseas production sites internationally.

As a comprehensive manufacturer of industrial fasteners, Ochiai has been supplying a wide variety of products to its customers in numerous fields for more than 70 years, but predominantly for the automobile industry. Having established a unified in-house production facility where the company performs everything from die design to manufacturing, Ochiai is today an industry leader in its specialized area of industrial fasteners.



Standard Parts

"I think the success of Japanese companies like ours in competing on a global stage is attributable to tradition and technologies that have been accumulated for decades," says company president



and CEO, Takayuki Ochiai. "There are a lot of family-run businesses that have continued to the second or third generations where new technologies with a value-added mindset are perpetually added to what they have already amassed. In terms of the global market, Japanese companies offer the best quality and at a lower cost, no one can compete with us."

With the Japanese government having mandated the adoption of electric vehicles (EVs) by 2035, the automotive industry is currently undergoing major changes as part

"The success of Japanese companies like ours in competing on a global stage is attributable to tradition and technologies accumulated for decades."

Takayuki Ochiai,
President and CEO,
Ochiai Co., Ltd.

of this transition. However, Ochiai, as a major supplier to the industry, is well placed to navigate this shift.

"Although EV cars are becoming a trend, the basic structure where our products apply remains the same," explains Mr. Ochiai. "That's because our products are mainly used for EPS, air compressors, brakes, and interior components like the seats, rather than combustion engines."

In anticipation of increasingly expanding needs in its overseas markets, as well as to meet the demands of production sites by



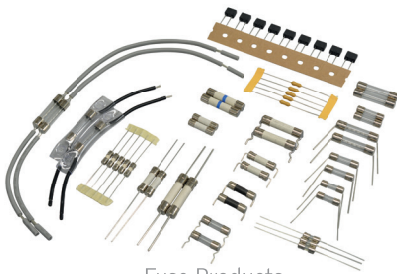
Custom Parts

customers expanding their international and domestic sales networks, Ochiai is currently advancing with establishing its overseas production sites. "Going forward, we will continue to passionately engage in technology and manufacturing as a global fastener manufacturer while keeping to our philosophy of always being in pursuit of limitless advances," Mr. Ochiai concludes.

OCHIAI
OF INDUSTRIAL FASTENERS
www.ochiai-if.co.jp

The cables behind factory automation

Since its establishment in 1938, NS Cable has perfected its information network, current fuse, and magnet wire products through its original core technologies and corporate philosophy: "Harmony is to be valued".



Fuse Products

With sales bases in Hong Kong, China, Singapore and the Philippines, NS Cable continues to expand and develop as a global company, with its immediate focus being on developing, manufacturing and selling overseas. Such a task requires strong synergies within the company, and

NS Cable possesses these in abundance: high-quality core products, round-the-clock avail-

ability for its customers as well as a skilled and talented workforce.

As the number one LAN cable company in the world and thanks to the Trans-Pacific Partnership, new opportunities are opening up for NS Cable: namely in the supplying of cables for the burgeoning industrial technology and IoT-led changes within the robotics and machine tool making industries.

NS Cable's meticulous attention to detail means a constant stream of returning, contented customers. As president of NS Cable, Taro Kawazoe, explains: "Even though Japanese products are more expensive, overseas customers buy our brand because of the reliability and safety of our products."



Magnet Wire

It's common knowledge that a key strength of Japanese companies is their focus on high quality and customer driven principles, and NS Cable is no different. An open feedback channel exists between NS Cable and its customer base, allowing the company to perfect its portfolio by supplying products that meet the needs of the market at any particular time. Testament to this approach was NS Cable's provision of 80% of the LAN cables used for the most recent Olympic and Paralympic games.

NS Cable has an array of strengths and the sky's the limit for this innovative company moving forward. With a strong emphasis on customer needs,



LAN Connector



"We are constantly adapting to the changing environment, providing high-quality products using our self-developed manufacturing equipment to improve society."

Taro Kawazoe,
President,
Nippon Seisen Cable Ltd.

reliable technologies spanning 80 years, as well as an exceptionally high number of skilled and driven workers, NS Cable will continue to be a pioneer in the cable industry for many years to come.

NIPPON SEISEN

www.nscable.co.jp/en

YUASA's innovative telescopic mast in high demand

With its expertise in hydraulic cylinders, YUASA developed a new telescopic mast having identified the need in the market for such technologies.



"Our telescopic mast was originally made for broadcasting cars, but recently has been used as the base for mobile phone antennas."

Hirofumi Yuasa,
President & CEO,
YUASA CO., LTD.

With its novel and original telescopic masts, YUASA has put to use its extensive technology and know-how in hydraulic cylinders to create a solution in high demand from a

growing range of industries. Engineered for precision control from the ground, these mast systems can be mounted with antennas, monitoring cameras, floodlights and other components at the highest point.

"Our telescopic mast was originally made for broadcasting cars in Japan, but recently, it has been used as the base for mobile phone antennas," says Hirofumi Yuasa, President and CEO of YUASA. "This is particularly helpful when antennas damaged by earthquakes need repairs. We aim to introduce this product globally."

With its expertise in hydraulic cylinders, YUASA developed this telescopic mast having identified the market needs for such technologies. "It has always been our company policy to respond to customers' needs," says Mr. Yuasa.

YUASA's diverse range of solutions also includes the crankshaft, in which the company holds the top



Hydraulic Cylinder

market share in Japan, and is a component at the heart of the common combustion engine, playing an essential mechanical function in the operation of automobiles, motorcycles, farming machinery and other products that Japan's heavy manufacturing industry has become globally renowned for.

"We cater to low-volume production orders," explains Mr. Yuasa. "If a company needs mass production of large-scale cranes, they might decide to manufacture them themselves; but if they only need a certain number of orders, they outsource it to us. And these low-volume orders make up our 40% market share. We are also manufacturing the telescopic mast cylinders and jack systems, for which we have about 40% of the domestic



Telescopic Mast System for lighting

market. We sell our jacks together with the expansion system which has allowed us to have a bigger share."

With regards to its three-stage telescopic cylinder, YUASA has recently increased production to increase sales as well, patenting the technology in the process.



Crankshaft



www.yuasakk.co.jp

Logistics DX

We are an MRO wholesaler

Trusco is a wholesaler that supplies MRO products (factory auxiliary materials), which is a generic term for consumables and other items used in manufacturing. We purchase our products from approximately 2,800 suppliers in 22 countries, and supply them to approximately 5,500 dealers and online retailers around the world. The number of suppliers is increasing by about 100 every year and will continue to grow.



AutoStore (Robotic Storage System)

Our own management theory

In general terms, we often emphasize the importance of "stock turnover". However, because customers are more satisfied with a wider range of products and the quicker they are delivered, we use the "stock hit rate", which indicates "how many of the orders we receive are shipped from Trusco's stock", as an important KPI. For every 100 orders we receive, 91 are shipped from our distribution centers. We have also applied this method to our local subsidiaries in Thailand and Indonesia, where we have distribution centers to hold and operate stock.

Environmental Protection through Direct Delivery

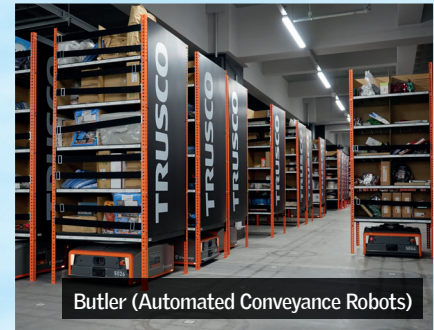
With Direct Delivery We Can:

- Halve delivery time
- Halve packing materials
- Halve shipping costs
- Halve environmental impact



Direct delivery to customers

In order to maximize customer convenience, Trusco uses state-of-the-art logistics equipment to deliver products directly to the end-user, instead of the usual Japanese practice of delivering orders to dealers or online retailers. The I-Pack®, which fully automates the packing process, can pack up to 720 items per line per hour, and we have five lines. By shipping directly from Trusco, we are able to reduce not only delivery times, but also packaging materials, delivery costs and environmental impact by half.



Butler (Automated Conveyance Robots)

"Planet Saitama" distribution center

In order to create a customer experience (UX) that makes our customers feel that "when you do business with Trusco, you get all the MRO products in the world", we have an inventory of about 470,000 items, a database of about 2.5 million products and 27 distribution centers in Japan. Our largest distribution center, Planet Saitama, holds approximately 440,000 items in stock and is a true "logistics wonderland", equipped with a variety of logistics equipment. It is Trusco's mission to deliver the products our customers need as quickly as possible.

Logistics DX

Trusco's management strategy would not be possible without Logistics DX. We use AI to expand our stock, helping us to stock the products our customers need, in the quantities that meet demand. We also invest heavily in logistics equipment to get products to our customers as quickly as possible. Over the past five years, we have invested around 5 million USD in logistics, which sets us apart from our competitors. We believe that immediate delivery is the best service, and by automating our warehouse operations, we are able to work faster and with greater precision, which in turn contributes to greater customer satisfaction.



Logistics Center, Planet Saitama

TRUSCO
TRUSCO Nakayama Corporation



As of September 1, 2021

90 Domestic Locations

- 2 Headquarters
- 61 Sales branches
- 27 Logistics centers

3 Overseas Locations

- Trusco Nakayama Thailand
- Trusco Nakayama Indonesia
- German Office (Dusseldorf)

Inquiries about this ad: info@trusco.co.jp
Purchase of stock: import1@trusco.co.jp
Product sales: overseas@trusco.co.jp