

The global rise of Japanese *monozukuri*

From Toyota, Nissan and right down to the smaller companies that supply these car makers with parts and manufacturing equipment, the Japanese *monozukuri* philosophy is at the core of high-quality manufacturing and unrivalled customer care.

Toyota is synonymous with "*monozukuri*", the Japanese concept of high-quality craftsmanship that was made famous in the world of business by the globe's number one car manufacturer back in the 1990s.

Literally meaning "making things", *monozukuri* focuses on a profound reverence for the thing being made, high-quality, customer satisfaction and the constant pursuit of innovation. Thanks to a strict adherence to the tenets of *monozukuri*, Toyota has long enjoyed the leading position in the global car market, where it is joined by its domestic rivals Honda and Nissan to make up the Top Five.

But a Toyota, Nissan or Honda vehicle is merely the sum of its parts. And many of the parts and manufacturing components and systems supplied to these car makers are built by the strong, agile and tech savvy Japanese SMEs that also closely follow the *monozukuri* manufacturing philosophy.

For some, perhaps, that is a natural choice in a country renowned for the highest manufacturing standards; but for many it is a prerequisite when you are working in partnership with some of Japan's most successful corporations.

As Toyota and Nissan expanded abroad, many of these smaller firms followed suit, learning about the world market at the same time that their corporate and manufacturing philosophies were strengthened through their close collaboration with Japan's leading car makers. This allowed them to diversify, innovate, and create new products and solutions to reach a whole new base of customers worldwide.

Take, for example, Cosmo Instruments Co., Ltd., which develops air leak testers, air flow testers and other equipment for the likes of Toyota, Nissan and several customers worldwide. Air leak testers began with the automa-

tion of cylinder block air-tightness tests for engines in the 1970s and expanded their scope to a variety of auto parts, gas, water supply, medical care, electric appliances, and electronic devices. In conjunction with the overseas expansion of Japanese automakers, in order to offer after-sales services on the manufacturing sites of its clients, Cosmo commenced its own overseas expansion in 1983.

"It was Toyota who believed in us from the first moment to provide them with the air leakage testing for their assembly lines. Even though we didn't have the product perfected, they became our mentor and guided us to achieve the desired perfection and meet its high expectations," recalls Cosmo president and CEO, Tomoyuki Furuse.

"We have had the opportunity to grow with big automotive companies such as Toyota and Nissan that in the 1980s expanded their business around the world. Naturally, this expansion committed us to do the same; because to offer our services correctly we had to grow where our product was being used."

Defined by high-quality, high-performance and extreme durability, Cosmo's air leak testers are specifically designed to obtain the results desired by its clients, with each one customized to meet the demands in each situation. Meanwhile, the self-checking function found on Cosmo testers gives them a competitive edge in the market by preventing sensors or valves from malfunctioning.

Mr. Furuse also emphasizes that what sets Cosmo apart from European and American manufacturers "is that they focus their efforts on sales and distribution while we strengthen the business with after-sales services." This focus on customer care is another key tenet of *monozukuri*, which stems from the concept of *omotenashi*, the distinct brand of Japanese hospitality.

In constant pursuit of innovation, as Cosmo looks to expand its knowledge and technological expertise by working in close collaboration with its customers, the Tokyo-based firm has begun developing state-of-the-art testing equipment for the next generation of autonomous and elec-



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Tomoyuki Furuse, President, Cosmo Instruments Co., Ltd.

tronic vehicles, which will depend much more firmly on electronic and computer components. "The greater the automation, the greater the number of tests required, and there are countless opportunities for us in this field," adds the Cosmo boss.

At the same time, while Cosmo's business is focused on the automotive industry, Mr. Furuse sees potential opportunities for the company's air leak testers to be deployed in the manufacture of waterproof 5G – and later 6G – communication towers.

Power to generate new possibilities

The generator brand of choice for construction site managers and music festival organizers alike, Denyo exemplifies the best that Japanese *monozukuri* has to offer.



"We have always provided what the clients have wanted. We focus on creating quality products that are compact, lightweight, silent and powerful"

Shoichi Shiratori, President & CEO, Denyo Co., Ltd.

Construction sites, oil rigs, chemical plants, hospitals, residential areas, music festivals, mountains, remote islands and disaster zones – these are just some of the places where you will find Denyo's high-quality, high-performing and highly durable power sources.

Backed by proven technologies cultivated over the past 70 years, Denyo's engine-driven generators, welders and air compressors are tried and trusted by customers in Japan and around the world. Such trust has allowed Denyo to build a large market share in Japan, while its power sources are widely used and highly regarded in more than 150 countries worldwide.

"When Japanese companies expanded to foreign markets, they took our generators and established them in overseas factories, sending Japanese staff to take care of the maintenance since these outdoor generators get exposed to rain and wind, which caused damage," says president and CEO, Shoichi Shiratori.

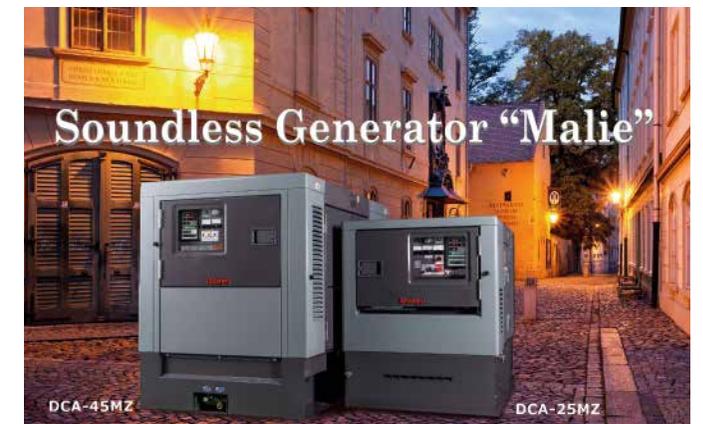
"Having the staff close to the product provided convenience and also led to enhancements of the generators over time. This is how we established ourselves in the overseas market."

When it comes to power sources built for the outdoors and often used in extreme conditions, durability is paramount. Manufactured to the highest standards of *monozukuri*, Denyo's machines are among the most durable on the market and can operate for up to 30-40 years. And the fact that Denyo products trade on second-hand markets for many years and still at high prices is testament to their durability and sturdiness.

To enable these machines to be used in a wide variety of settings – from scorching hot conditions in the Middle Eastern desert to intense cold in northern Russia – engineers at Denyo's Development Center in Japan have developed and adopted various technologies and techniques. For each generator and engine, a thick center frame supports the main body of the unit on all sides, while anti-vibration rubber suspensions are placed on the base, which is the ground contact area. This not only achieves a high-level of quietness, but also reduces the risk of malfunction caused by vibration.

Offering high-performance power generation and durability as well as energy conservation and noise reduction also stems from responding to client and market needs, which has been at the core of Denyo's *monozukuri* philosophy.

Some of its latest groundbreaking products include the Malie DCA-25MZ, one of the world's quietest generators, while its engineers are currently developing a hydrogen-fuel generator in response to environmental demands.



"We have always provided what the clients have wanted," explains Mr. Shiratori. "Regarding our generators, each client has specific needs and specifications; that is why we manufacture a variety of generators in small quantities. We are not involved in the market of providing cheap generators with reduced specs."

"We focus on creating quality products that are compact, lightweight, silent and powerful. Moving forward, we are putting our efforts in developing outdoor engine-driven products that are more environmentally friendly."

Denyo's commitment to R&D has made the company a global innovation leader in its field.

On construction and other worksites, multiple generators are used together, which requires software technology to coordinate the generators accurately and ensure a consistent and stable supply of power. While pursuing such technology, Denyo surprised the world by achieving parallel operation of 32 generators, four times the amount it had managed previously. "It's rare to use so many units together," the company president says, laughingly. However, this achievement perfectly encapsulates the history and culture of innovation and product development at Denyo.



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Supporting 5G, IoT and Big Data with existing technologies



"Japan has always been the leader in optical communication technologies"

Masatoshi Ueno, President, Seikoh Giken

For almost 50 years, Seikoh Giken has been supplying its customers in the IT field with high-precision mold designs and processing technologies that put them ahead of the competition.

And as the world enters a new era driven by 5G, IoT and Big Data, Seikoh Giken will continue to leverage on its manufacturing know-how and *monozukuri*

craftsmanship to develop the high-quality fiber-optic components needed to ensure high-speed IT networks can perform at the levels demanded by these new technologies.

During Japan's boom years in the electronics industry in the 1980s and 90s, Seikoh Giken was a pioneer in the develop-



ment of molds for CDs and later DVDs, developing the world's first optical fiber polishing machine for the mass production of optical transmission and optical devices. Today, Seikoh Giken is providing technologies and products for optical networks marked by small size, high speed and large data volumes, while having also taken a foray into

developing high-performing molded products for the biotechnology and medical fields.

"We are currently increasing our presence in different market segments, we will try new markets such as 5G, IoT and Big Data by utilizing existing technologies like ultra-precision molds that can be controlled by sub-micron and nanometer range," explains president, Masatoshi Ueno.

"Furthermore, our landmark entrance into the bio and medical-related field is part of the technological race that is taking place at the global level. We want to be



one step ahead of our competitors by forecasting trends and thus adapting our business."

Indeed, adaption to the ever-changing market needs and technological advances has been key to Seikoh Giken's success over the past half century – as too have its people. In fact, Mr. Ueno points out that what has separated Japanese *monozukuri* from regional competitors is precisely the "Japanese national character of being devoted to our work, which gives us a competitive advantage and uniqueness".

As Seikoh Giken (already with a foothold in the US, Europe and China) looks to strengthen its worldwide presence, particularly in Southeast Asia, it plans to develop new partnerships and undertake acquisitions like those already undertaken to acquire French company, DATA-PIXEL SAS, and Japanese firm, Fuji Electronics Industries. "Our goal is stand out and establish our name in bold on the history pages," concludes Mr. Ueno.



Nihon Superior: Soldering for a new world

When in it comes to Nihon Superior-branded products, the proof is in the name.

With the electronics and automotive industries striving to build thinner, lighter and more technologically advanced products, demand for high-quality soldering and joining technology continues to grow.

"We want to help create a brighter and more prosperous future"

Tetsuro Nishimura, President, Nihon Superior

Exceeding the expectations of the highest-demanding customers for more than 50 years, Nihon Superior develops the most advanced soldering and brazing products for a wide range of applications, from mobile phones, air conditioners and refrigerators, to electronics vehicles and robots.

Backed by its accumulated expertise in these technologies, Nihon Superior has become a

leading global company with manufacturing and sales centers in Japan, Asia, Europe and the U.S. – where the company's superior quality and environmentally friendly products are preferred by discerning customers who value *monozukuri* (Japanese craftsmanship) over the competition.

"Due to the proliferation of competitors worldwide, consumer interest in knowing the roots of the product, in knowing how things are done, is fading, thus *monozukuri* is losing strength," says president, Tetsuro Nishimura. "We are doing things that we believe will bring back recognition of the value of the production process."

Soldering with lead-based products can have a major impact on the environment. That is why that, as a green-focused company supporting the UN's Sustainable Development Goals (SDGs) for 2030, Nihon Superior



The Nihon Superior management team, from left, Director, Takatoshi Nishimura, Chairman, Toshiro Nishimura, President, Tetsuro Nishimura

also wants customers to be aware of the fact that its environmentally-friendly products can support their own sustainability efforts.

"It is very important to educate the consumer so that they know that using high-quality products like ours also brings them closer to meeting

these goals," concludes Mr. Nishimura. "A key attribute now is environmental friendliness and we are working to achieve that in our products and our operations."

