

Comprehensive centers providing one-stop Service to Japanese and foreign companies wishing to start business in Hyogo-Kobe

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Hyogo-Kobe Challenges to the World with Underpinned Quality, Innovativeness and Uniqueness in Manufacturing

Blessed with rich nature and diverse climatic conditions, Hyogo Prefecture has traditionally produced excellent products sake, textiles, pottery and cutlery. In the Meiji Era (1868-1912) when Japan opened its doors to the rest of world after a long period of national isolation, overseas cultures flowed into Kobe as the open-gate, which were eagerly accepted by the city's residents. Many elements of these cultures spread and have taken root throughout Japan. After the World War II, industry in Hyogo-Kobe was restored gradually to manufacture and export various products, including steel, ships and machinery, winning the admiration of the world for their high quality and advanced technologies. Through this history, the business climate in Hyogo-Kobe, characterized by an enterprising spirit, has been nurtured, underpinning the development of products and technologies that we can boast to the world. In this volume, we would like to present some examples of companies in this area that have been displaying their uniqueness in the field of manufacturing.



Technos Japan Co., Ltd.

Providing bold solutions for problems in an aging society in the field of bed-leaving alarm systems

Located in Himeji City, home to the World Heritage property and national treasure Himeji Castle, Technos Japan is a unique company with its extensive lineup of sensors and alarm systems that are designed on the assumption of all possible situations. The company provides around 70 types of bed-leaving alarm systems, including cordless ones that can check the behavior of patients who need to stay in bed and that alert caregivers when the patient leaves. President Onishi has enthusiastically said that their products hold a 70% market share in Japan. For these products, the company received a Special Prize at the 46th Good Company Awards from the Medium and Small Business Research Institute in January 2013.



Dog-shaped watching robot with a built-in bed-leaving alarm system, and other devices

Today, this company is focusing especially on a comprehensive support system for the nursing care of elderly people at home. In Japan's aging population, the number of patients with mild dementia is increasing. This system is devised to comprehensively support the lives of such patients by checking their

condition through images and sounds as well as health information sent from a sensor installed in the system. The core device of this system is a dog-robot shaped device. With this device, which combines the same communication functions as a mobile phone, camera, speaker, microphone and radio set, caregivers can check the condition of patients by remote-control. These tools make it possible to add diverse functions, in addition to the bed-leaving alarm, such as caregiver call, the administration of medicine and control of the patient's daily life rhythm including diet and exercise. Therefore, this system is attracting attention as a system that can provide support in responding to individual situations and needs.

Takamaru Engineers Co., Ltd.

Takamaru Engineers has contributed to manufacturers by proposing optimal robot systems, and by nurturing and supplying well-trained robot operators.

Founded in 1962 in Amagasaki City, a factory city in Hyogo, Takamaru Engineers is a nationally rare company that can provide robot systems corresponding to customers' needs such as welding, conveyance and burr-removal by selecting optimal manufacturers and models from among the many types of industrial robots on the market. In 2011, the company established a factory in Nishinomiya City, with two 25-ton cranes with a 14-meter lifting height on a vast site 25 meters wide and 200 meters long, to manufacture large industrial robot systems for automotive manufacturing lines and steel mills. The company conducts their pre-introduction adaptation tests of systems and responds to requests for consultation on the introduction of robot systems at the Amagasaki Robot

Technical Center (ARTC), which is equipped with the latest industrial robots from the major domestic manufacturers. Since 2010, it has provided special lectures to train industrial robot operators, because they are in short supply in the manufacturing sector. The total number of participants in the lectures has reached over 700 as of May 2013. Many students, who are yet to start their careers, participate in the training these days.



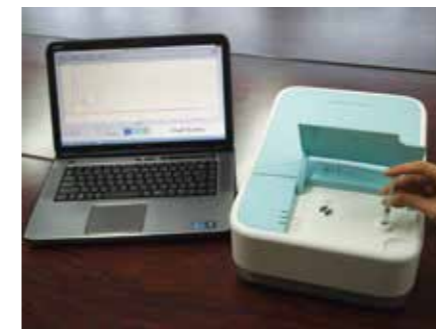
ARTC installs/introduces latest robots from major manufacturers.

FIS Inc.

As a leading manufacturer of gas sensors for air purifiers, FIS is actively developing breath odor checkers and other new products.

FIS is a world leading company that manufactures gas sensors for air purifiers and breath alcohol checkers, accounting for the largest market share in the world. With the head office located in an area close to Osaka International Airport (Itami Airport), the company secures easy access to Tokyo and other major urban areas in Japan. While semiconductor gas sensors are small and inexpensive, it is said difficult to secure their stable sensitivity for a certain required period of time. Consequently, few companies can put them to practical use. FIS is one of the

few companies that have successfully developed sensors with long-lasting stable sensitivity. Their hydrogen sensors for home and cars fuel-cell have already been launched on the market, and demand is expected to increase in the coming years.



"Oral Chroma" breath odor analyzer for dentists, into which breath gas is injected

In addition to these sensors, the company focuses on expanding the market for breath odor checkers for dentists, and small gas-chromatograph sensors that can detect gas in ultra-low concentrations at ppb (1/1 billion) levels with easy operation. In particular, they are going to launch new breath checker products for dentists in overseas markets in August, initially aiming to sell 1,000 units annually. The company is currently developing a halitosis analyzer to be used to analyze breath in the initial diagnosis of cancer, aiming at practical application within three years.

Nunobiki Manufacturing Co., Ltd.

Producing precisely perforated metal sheets, Nunobiki Manufacturing challenges screen technologies around the world with its exquisite technology and expert spirit.

In addition to these five companies, there are many other companies in Hyogo-Kobe underpinning the new generation of technologies for manufacturing the products of the future that we can be proud of: for example, OTOWA Electric Co., Ltd (Amagasaki City), which has developed various lightning protection systems for power sources, signal circuits, etc.; Idea Co., Ltd. (Kobe City), which is engaged in test-manufacturing of industrial goods by using three-dimensional coordinate measuring machines and CAD data; Okutani Wire Netting, MFG, Co., Ltd., which enjoys a high reputation for its technology to press metal or resin boards and punch holes of a diameter less than the board's thickness; and Nozaki (Asago City), which has sophisticated technologies to precisely grind ultra-hard metals.

The company was named after the Nunobiki Falls, a well-known scenic waterfall in Kobe where the company was founded. Nunobiki Manufacturing is engaged in the production of finely- and precisely-punched metal screen, mainly for Japanese customers. Its products are applied to screens of centrifugal separators used to make fine sugar and salt, filters of dust collectors used at manufacturing



Precisely perforated metal sheets of Nunobiki Manufacturing

sites in the food, electronic and medical fields. The company's technology, to punch holes 1 millimeter or less in diameter as densely as possible in ultimately restricted space, has put it beyond reach of its rivals. President Takashi Ando proudly says that they can punch up to 4,055 holes 0.25 millimeters in diameter in a one-inch (25.4 millimeters) square. This technology is underpinned by craftsmen with a wide range of skills, with which they start creating precise dies for their own original devices, as well as the mindset of traditional Japanese artisans, who do not compromise when manufacturing quality goods. These days, to meet increasing demand from overseas countries mainly in Southeast Asia, Nunobiki Manufacturing is aggressively expanding its business into overseas markets by preparing English booklets and other measures. Nunobiki's products will soon be seen throughout the world.

Nozzle Network Co., Ltd.

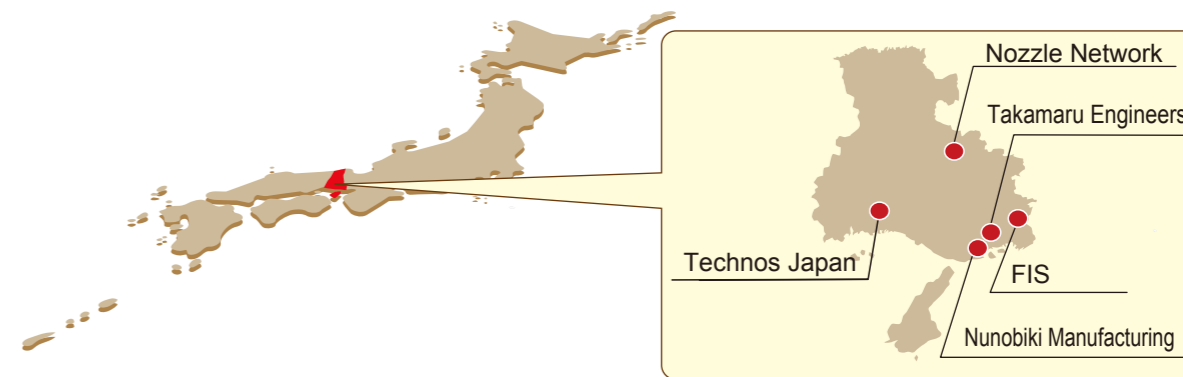
Long engaged in research, Nozzle Network now aims to realize non-invasive drug delivery vaporizers replacing injections.

In Tamba City, which is surrounded by rich nature and known as a producing area of luxury food stuff such as black soybeans and matsutake mushrooms, Nozzle Network has long been engaged in research on spray nozzles that are used to jet out water in various ways such as park fountains and home bathroom showers. Today, it focuses on the development of nozzles that can convert liquid into particles of micrometer-level diameter, and has launched onto the market an injection-shaped sprayer "Syringe-type 5 μm Atomizer" that generates a fog composed of extremely fine particles 5 micrometers (5 x 10⁶ meters) or less in diameter. Just by pressing its piston, liquid and two air flows are specifically designed and structured to jet out of the nozzle. Crossing each other, the air flows shatter the liquid into particles 5 micrometers or less in diameter, which results



Injection-shaped sprayer "Syringe-type 5 μm Atomizer" jetting out a fog of particles 5 micrometers or less in diameter

in an extremely fine fog. This product can be applied to oral inhalation that has far less impact on a living body, dermal administration, and non-invasive medicine delivery that can replace painful injections. With its technology and development capacity, the company is expanding its sales channels for these sprayer nozzles to medical equipment manufacturers and medical institutions in Japan and abroad. It is also developing sprayers for vaccination shrewdly.



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