## "DINA-PRISM" self-developed diamond saw wires

J T M

**Key features of the product**

1. Low-priced diamond saw wire (For silicon / solar cells materials)
2. Long-life diamond saw wire (For sapphire /LED lighting)

We are independently developing the "DINA-PRISM," a diamond saw wire cutting tool that is essential to the slicing process of electronic materials used for solar batteries, LEDs, etc. By using a unique method for anchoring our diamond grains, we can achieve high-speed results, remarkable strength, and reduce costs, while maintaining a high reputation.

### Solutions for our clients

Our high-speed, high-strength diamond fixation technology enables us to produce our "DINA-PRISM" diamond saw wire with high-efficiency at a low cost. This also allows us to provide speedy, detailed customization to meet the demands of various customers from slice processing sites i.e., diamond grain diameter, core diameter, and abrasive grain density. In February 2012, the "DINA-PRISM" diamond saw wire won the Minister of Economy Trade and Industry Prize at the 4th Monozukuri Nippon Grand Awards.

Nakamura Choukou Co., Ltd. http://www.nakamura-gp.co.jp/ English／中文
27-27, Tsuruta-cho, Nishi-ku, Sakai City, Osaka
ISO 9001 ISO 14001

## Manufacture and assembly of general industrial machinery parts

J T M

**Key features of the product**

1. Provide products that give security and reliability to customers.
2. High-accuracy precision cutting
3. Handle everything from material procurement to assembly and confirmation of functions

We have consistently performed precision cutting since our founding. Our advantage is that we have established a system of wide-ranging production from limited production of diversified products to high-volume production of similar products. We can perform integrated build-to-order manufacture from material procurement to precision cutting, heat treatment, surface treatment, and assembly.

### Solutions for our clients

With the precision cutting technology we have cultivated since our founding and the quality assurance capability we have acquired in the automobile industry, we supply manufactured parts and assemblies to 19 types of industry, including automobile torque converter clutches, hydraulic equipment, reduction gears for ships, semiconductor equipment, measuring instruments, medical equipment, and robots for production. Regarding processing technology, we specialize in thin-wall high-accuracy processing. If you have any problems in parts processing and assembly, you can consult with us any time. We have acquired ISO certification and Eco-Action 21 certification.

Nakano Manufacture Co., Ltd. http://www.nakanoss.com/ English
21-26, Shinmachi, Higashiosaka City, Osaka
ISO 9001

## Machine-processed precision parts for various types of industrial machinery

J M

**Key features of the product**

1. Machine-processed precision parts made of steel materials
2. Top-class quality, delivery and costs
3. Conduct concurrent activities with customers.

We specialize in important safety and other parts that require precision among component parts of various types of industrial machinery. We perform processing on materials and heat and surface treatment, and deliver products to customer assembly lines as finished products. Because we have acquired ISO9001 and ISO14001, customers can use our products without worry.

### Solutions for our clients

If companies aim to enhance the functions and precision of products, make machines that cause less troubles, strengthen quality assurance, and improve the rate of line progress, we can be consulted and make various proposals. We ensure the traceability of the products and meet customer demand by using a proprietary made-to-order production and inventory management system that covers from material procurement to processing and delivery. Because we have introduced the latest machines for most manufacturing processes, we can deliver products that customers can procure without worry.

UEGAKI KINZOKU SEISAKUSYO CO., LTD. http://www.uks33.co.jp/ English
4-8-36, Kawata, Higashiosaka City, Osaka
ISO 9001 ISO 14001

## Miniature precision cutting technology

G O T M

**Key features of the product**

1. Enables hole drilling as small as 5 φ μ in diameter.
2. Enables groove beveling of 0.1mm in width and 0.3mm in depth.
3. Enables mirror production with a surface roughness of Ra0.02 to 0.04 by cutting.

Examples of applications are as follows. 1. Equipment that detects of air, gas or liquid leaks based on ultra-small hole drilling technology 2. Miniature molds, biochips, fluid channel, etc. 3. Precision parts that require heat, light reflex, and sliding surfaces. Products that require high surface roughness, such as vacuum chambers and transfer arms used in the semiconductor industry.

### Solutions for our clients

The assumed customers are research and development departments and commercial production departments of LCD, semiconductor, medical equipment, automobile, and various types of automated machine makers. We can quickly deliver products at low costs owing to our integrated management approach to proposals that include design, materials, processing, and surface treatment.
1, 2. We realize forms and high precision that are difficult to achieve via pressing, laser cutting, and etching.
3. Since our mirror production technology (for aluminum, brass and copper) has realized high surface roughness without polishing, users can reduce polishing expenses and solve problems such as the encroachment of abrasive grains into materials in buffing and lapping processes.

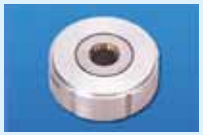
Nakata Co., Ltd. http://www.nakata-ss.co.jp/ English／한국어
5-1-15, Kamio-cho, Yao City, Osaka
ISO 9001 ISO 14001

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible

CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13）E-mail：monob2b@mydome.jp

## Helical gear cold molding technology

G O J T M



**Key features of the product**

1. Pursue near net shape
2. High quality and high precision
3. Longer life and lower costs for molds

We can forge precision tooth gears that used to be produced only by machining. Owing to our high productivity, we can mass-produce products at low costs. Our technology for correcting the dimensions of gears is based on distortion from forging and heat treatment, and has made the most difficult μ -grade control of helical tooth profile errors and tooth trace direction errors possible.

### Solutions for our clients

The assumed customers are diverse industries including the automotive, forging, formed and fabricated materials, and parts industries. In the analysis software business, the assumed customers are companies that work plastics such as the heavy, construction machinery, electronics, steel, nonferrous metals, tools, heat treatment and lubrication industries. We make full use of state-of-the-art plastic working technology based on mold-making technologies, and meet customer needs, as a company that provides total solutions in plastic working fields, which include manufacturing of molds for precision-forging, CAE-optimized design, and development of products that ensure quick delivery using the press originally used for trial manufacture.

YAMANAKA ENG CO., LTD. http://www.yamanaka-eng.co.jp/ English ISO 9001
4-4-24, Kano, Higashiosaka City, Osaka

## Cold-forged molds

G O T

**Key features of the product**

1. Long-life molds suitable for commercial production
2. Can handle difficult-to-process materials and difficult shapes.
3. One-stop service from design to shipping

Our molds are used for producing bolts and other important safety parts used for automobiles and construction. Based on superhard processing, coating treatment and proprietary mounting methods, we have succeeded in producing long service-life molds that are suitable for difficult-to-process materials and have good abrasion resistance and impact resistance.

### Solutions for our clients

Through one-stop service that covers from design to shipping products, we take an approach of solving the problems together with customers. Moreover, via production and management innovation based on 3S activities -- seiri (arrange), seiton (organize) and seiso (clean) -- that we have been working on since May 1999, we emphasize high quality control of molds and carefully crafted services to customers. As services that have developed from the 3S activities, the "Digital Dolphins" documentation system that controls user information as well as fee-based factory tours in which visitors can experience 3S activities, are welcomed by customers.

Hiraoka Hyper Tools, INC. http://www.sg-loy.co.jp/ English ISO 9001
2-7-22, Tatsuminaka, Ikuno-ku, Osaka City, Osaka

## Directly carved precision molds and embossing rolls

O J T

**Key features of the product**

1. Direct carving technology based on digital data
2. Advanced digital data editing technology
3. Simple trial manufacture system

Our core technology is to manufacture molds and embossing rolls through 3-D fine processing technology by faithfully reproducing complicated designs such as natural patterns, as 3D design digital data.

### Solutions for our clients

We meet a variety of needs from customers such as manufacturers of extrusion-molded ceramic exterior walls and other building materials, as well as wallpaper, tile and porcelain panels, metal patterned panels, paper, and resin films. In particular, we specialize in directly and deeply carving patterns of natural texture (wood grain, marble grain, Japanese paper patterns) into molds and embossing rolls. We can manufacture and quickly deliver miniature test molds with which customers can perform evaluation. We also take on challenges that require us to process superhard materials and microembossment.

MIKI SEISAKUSYO CO., LTD. http://www.mikiss.co.jp/ English
1-7-28, Oono, Nishiyodogawa-ku, Osaka City, Osaka

## Water-repellent, oil-repellent, and non-adhesion "SN fluorine coating"

G O J T

**Key features of the product**

1. Coating thickness is not more than 1 μm.
2. Coating formation is possible at low temperatures not higher than 98°C.
3. Good water-repellent, oil-repellent, and non-adhesion effects

We have developed a fluorine coating that suppresses the adhesion of adhesive to work tools, which translates into enhanced productivity. The coating thickness is not more than 1μm, compared with conventional coating of 20-50μm. It can be used for cutting-edge ultraprecise molds. Moreover, the films can be formed at low temperatures of not higher than 98° C (compared with the conventional coating of 260° C or higher) and, therefore, the precision of molds is not damaged.

### Solutions for our clients

Sheet devices are increasingly introduced into the manufacturing processes of electronic parts such as touch panels. That has caused many problems such as quality problems due to secondary transfer of adhesive originally adhered to work tools onto products and a subsequent fall in productivity caused by material feeding errors and cutting troubles. Our "SN fluorine coating" suppresses the adhesion of adhesive to work tools, thus enhances productivity. The fluorine coating adds water-repellency and oil-repellency to products, and can be extensively used for cutting tools for highly-functional films of lithium batteries, industrial machinery, and medical equipment such as catheters. The film is formed at a low temperature of not higher than 98℃ and, therefore, the precision of molds is not damaged.

Shin-Nihon Tech Inc. http://www.sntec.com English ISO 9001 ISO 14001
2-2-81, Hama, Tsurumi-ku, Osaka City, Osaka

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible



CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13） E-mail : monob2b@mydome.jp

## VTOL (vertical takeoff and landing) unmanned aircraft (under development)

G O J T

### Key features of the product

1. World's first quad tilt wing VTOL navigation
2. Aiming at long-distance (1,000 km) range
3. Make use of the advantages of fixed wing and rotary wing.

To rate the usefulness of our unmanned aircrafts, we are preparing them for Antarctic observation being conducted by the National Institute of Polar Research. Moreover, using the jointly-developed "Maido No.1" (thunder observation) satellite, we will establish a system in cohort with a university to supply thunder forecasting information via space, air and ground observation.

### Solutions for our clients

Because the unmanned aircraft enables monitoring of large-scale disasters such as earthquakes and forest fires, disaster relief can be provided earlier. Moreover, the unmanned aircraft enables local observation of difficult-to-enter places such as the craters of volcanoes, Antarctica, and mountainous areas, thus preventing loss of life from close-up observation. The monitoring of transmission line control is normally conducted by manned aircrafts, but cost reductions are possible if costly monitoring observations are conducted by unmanned aircraft. Moreover, the unmanned aircraft facilitates exploration of oil and ocean resources.

AOKI Co., Ltd. http://www.aoki-maido.co.jp English ISO 9001
5-7-3, Takaidanaka, Higashiosaka City, Osaka

## Processing method that combines bending and deep drawing by making full use of servo pressing machines

G O J T M

### Key features of the product

1. Cost reductions by shortened process
2. Customized specifications via progress die-press functions and raising functions
3. Cost reductions by reducing the number mold surfaces

By changing the cutting process into pressing that ensures the precision of burrs, concentricity, and flatness, we produce 2 million gas emergency trip valve parts a year on an automated line of robots.

### Solutions for our clients

We have established an integrated production system from parts processing to finished product assembly by which we can meet requests based on customer designs and thereby reduce prices. We practice high-precision high-quality manufacturing using single die-presses, progressive die-presses and laborsaving robots. With the increase of commercial production capability by automation and the introduction of robots, we can perform small lot production of diversified products.

MARL KINZOKUSEISAKUSHO http://www.marl-k.co.jp/ English
6-2-13, Shibukawa-cho, Yao City, Osaka

## Ultra-deep drawing press processing by transfer press

G O J M

### Key features of the product

1. Integral molding from one piece of plate
2. Produces seamless pipes from one piece of plate.
3. Deep drawing press processing of ultra-thin plates

Using a transfer press, we make all-in-one products with covers and pipes integrated into the sides, as well as seamless pipes with a tolerance range of 50μm. Since our process requires no brazing or cutting, it contributes to cost and weight reductions.

### Solutions for our clients

We mainly handle metal products for automobiles, consumer electronics, and new energy through ultra-deep drawing press processing using a transfer press. By making full use of ultra-deep drawing technology, we can make design proposals and VA/VE proposals, and promote cost reductions. We make all products from one piece of plate using a deep drawing press. By integrating the conventional processes of brazing and introducing composite parts into the deep drawing press process, we have eliminated brazing and assembly all together. We also press die-cast and sintered products that conventionally require cutting, in order to eliminate the processing and reduce the weight of products.

Fuji Kinzoku Co., Ltd. http://www.fuji-kinzoku.co.jp/ English ISO 9001 ISO 14001
1-12-3, Haradanaka, Toyonaka City, Osaka

## Manufacturing of aluminum die-cast products for automobiles and electronic equipment

M

### Key features of the product

1. Integrated production from mold-making to forging and precision instrument processing
2. Global production system in Thailand, China and Japan
3. Mass-production technology

The examples of applications are aluminum die-cast products for electronic equipment (hard disk drives, bases, drive motor parts, etc.) and aluminum die-cast products for automobiles (steerings, engines, car air conditioners, transmission parts, etc.)

### Solutions for our clients

We have established an integrated production system comprised of design and manufacture of aluminum die-cast molds, casting by die-cast machine, and precision instruments processing by machining center and NC lathe. Moreover, with the establishment of commercial production plants in Thailand, China, and Japan, we can supply high quality, precision die-cast products such as automobile parts and electronic equipment parts to customers around the word. In particular, the hard disk drive parts produced in Thailand have exceeded a 50% share of the world market.

NSC Co., Ltd. http://www.nsc-osk.jp English ISO 9001 ISO 14001
1-3-7, Shinke, Higashiosaka City, Osaka

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible

CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13）E-mail：monob2b@mydome.jp

## "μ-MIM®" micro metal injection molding

G O T M

### Key features of the product

1. Materials of poor formability or high melting point can be formed into shapes.
2. Commercial production of precision metallic parts of complicated shapes
3. Combination of different kinds of materials and various composite technologies

We specialize in commercial production of extremely small, high density and high precision parts of complicated shapes and less than several grams in individual weight, and have established production as a proprietary technology called "μ-MIM®". The technology can be applied to a variety of materials including stainless steel, titanium, and copper.

### Solutions for our clients

Our forming technology can be applied in various fields including electronics, precision optical instrument, medical treatment, and robots. It is possible to combine and assemble more than two parts, and complicated shapes with under-cut restrictions are easily available using Net-Shape method, which make die release impossible in normal forming processes. Based on these technologies, we can promote a reduction in man-hours required for assembly, press-fitting, etc., stable quality, and cost reductions. Moreover, based on this technology, we have developed proprietary porous metallic materials (microporous metal) that contain innumerable micron-sized holes.

Taisei Kogyo Co., Ltd. http://www.taisei-kogyo.com English
26-1, Ikedakitamachi, Neyagawa City, Osaka
ISO 9001 ISO 14001

## High-precision magnesium die-cast

G J T M

### Key features of the product

1. Weight reduction by making products thinner
2. High dimensional accuracy
3. Flexible design

In response to weight reduction demands in how they lead to energy-savings, we specialize in products made of magnesium and can produce parts of difficult-to-make shapes if aluminum is used, using our molding technologies. Users also evaluate our technology for producing heatsink parts, for which aluminum parts are otherwise mostly used.

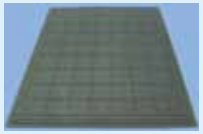
### Solutions for our clients

Magnesium exists as an alternative material for aluminum by providing good radiation performance, flexible design and light weights that aluminum cannot achieve, as well as an alternative material for resin by providing strength that falls short if resin is used. For transport machines, light weights are essential. Based on technology that we have cultivated in producing magnesium die-casts, we can make parts lighter and thus improve fuel consumption. Better radiation performance resulting from thinner parts may improve luminous efficiency.

Sankiblast Co., Ltd. http://www.sankiblast.co.jp English／中文
6-82-2, Yamaga-cho, Yao City, Osaka

## Fluoropolymer Lining for Multi-Tubular Heat Exchanger

G O J T M



### Key features of the product

1. High Purity, Very Low Eluition
2. High Chemical Resistance
3. Usable: Pressured and Decompression

Nowadays, heat exchanger is utilized in every industry in various shape in order for purpose.
"Fluoropolymer Lining for Multi-Tubular Heat Exchanger" will achieve problem solution in difficult areas which use high purity liquid as process liquid or fluorinated substances.

### Solutions for our clients

(1) High Purity, Very Low Eluition on every liquid contact areas by NFX-2700 (high purity lining)
(2) Multi-Use for Acids and Alkalis by High Chemical Resistance and Gas Barrier
(3) No Crack by Physical Impact (Advantage to Glass Lining)
(4) No Stick of Scales by fluoropolymer non-stick property
(5) Available in Circumstances of Under Pressure or Decompression
(6) Applicable on Pressure Vessels (Lining is applied after equipment fabrication)

Nippon Fusso Co., Ltd. http://www.nipponfusso.com/ English
2-4-6 Mokuzaidori, Mihara-ku, Sakai, Osaka
ISO 9001 ISO 14001

## High frequency induction heating, precision surface hardening facilities

G O J T

### Key features of the product

1. Minimal dimensional changes. Elimination of distortion and polishing processes possible.
2. World's fastest treatment rate (Cycle time)
3. Can reduce $CO_2$ emissions by 80%.

We design and manufacture high efficiency and high productivity equipment by using precision surface hardening technology based on induction heating (IH). We can propose and provide the most suitable heat treatment methods to customers. By further promoting technology development, we will deliver safer and more ecology-conscious surface treatment equipment.

### Solutions for our clients

We provide integrated production services starting from the stage of trial manufacture to customers in industries that make automobiles, transport vehicles, heavy machinery, construction machinery, machine tools, machine parts, medical equipment, tools and energy. We can design and manufacture for customers products that employ the most effective induction heating-based precision surface hardening method, by not only reducing processes and improving product quality in view of all processes including contract processing, equipment planning, and planning and production schedule, but also reducing energy use and $CO_2$ emissions.

Fuji Electronics Industry Co., Ltd. http://www.fujidenshi.co.jp English／中文
6-71, Oibara, Yao City, Osaka
ISO 9001 ISO 14001

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible



CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13）E-mail：monob2b@mydome.jp

## MIM(Metal Injection Molding Parts)

G J M

### Key features of the product

1. Suitable for medium-volume commercial production of intricate small products and products made of difficult-to-process materials
2. Labor-saving because of integrated parts
3. Labor-savings in post-processing

One field of sintering, MIM can produce complex-shaped, high-density, and high-accuracy metal parts. It is suitable for medium-volume commercial production of small parts and parts made of difficult-to-process materials. Through the integration of the vacuum heat treatment technology that we have cultivated for many years, we make proposals for yet higher strength, greater reliability, and joint development of new materials.

### Solutions for our clients

In addition to providing the general features of MIM, as a total planner of MIM, we meet various customer needs. (1) Joint development including new materials by introducing gas atomized powder manufacturing equipment (2) Improvement of mechanical properties by obtaining further densification through the introduction of pressure-assisted sintering furnaces (3) higher reliability through the introduction of CT scan equipment and X-ray inspection system (4) Enhancement of inspection system through the introduction of a variety of inspection equipments including a noncontact fully automatic 3-D measuring system (5) Integration of the heat treatment technology we have cultivated for many years and proprietary production technology

Osaka Yakin Kogyo Co., Ltd. http://www.osakayakin.co.jp/ English ISO 9001
4-4-28, Zuiko, Higashiyodogawa-ku, Osaka City, Osaka

## Automotive press mold maintenance services

G

### Key features of the product

1. Maintenance services for press molds
2. Repair services within maintenance services
3. Mold remodeling services by design change

We provide mold maintenance services to automobile makers in Japan and overseas. We accept difficult-to-maintain molds from customers, and perform cleaning, repair, modification and design change of molds.

### Solutions for our clients

By taking advantage of mold making technologies accumulated over a long experience with making automotive press molds, we support the launch of automaker projects around the world. We consider it a waste not to use our know-how to solve problems in the press mold industry. Molds directly made overseas and molds in the process of mass-production have various troubles and failures before start-up. We can provide our mold maintenance services by visiting customers in any place around the world.

MEISEI METAL INDUSTRIES Co., Ltd. http://www.meisei-metal.co.jp English／中文／한국어 ISO 9001 ISO 14001
4-5-12, Nozaki, Daito City, Osaka

## Making molds by shortened process

G O J T M

### Key features of the product

1. Shortened process based on over half a century of experience
2. Can make proposals on total cost reductions from planning to completion of products.
3. Can pursue research and development through industry-academia-government collaboration.

We provide molds made by a greatly shortened process that was uniquely developed based on the experience and results of producing more than 10,000 molds over half a century. We can make molds in a shortened process because we have pursued labor-savings, which were realized by reducing overall processes ranging from product planning and trial manufacture to commercial production and completion of metal products, and developed environment-conscious production technology that helps reduce total costs.

### Solutions for our clients

Our press molds have been used in various fields including automobile parts, air conditioners, steel furniture, consumer electronics, vending machines, architectural hardware, and lighting equipment. The assumed customers are manufacturing industries such as automobiles, consumer electronics, air conditioners, steel furniture, architectural hardware and lighting equipment. We have made more than 10,000 molds, and we have realized high quality, low costs and quick delivery based on the experience and results of more than half a century. We have established an integrated production system comprised of proposal, manufacturing and processing that covers from product planning and trial manufacture to commercial production and completion of metal products.

KONISHI METAL MOLD ENGINEERING LTD. http://konishikanagata.sharepoint.com English
6-4-47, Nakaishikiri-cho, Higashiosaka City, Osaka

## Ultra-precision, ultra-fine, and ultra-small metal press working

G O J T M

### Key features of the product

1. Specialized in ultra-fine metalworking of electronic parts
2. From mold design development to commercial production
3. Can solve customer problems with technologies of true master craftsmen.

We specialize in ultra-fine, ultra-small press working of ultra-fine, ultra-small metal products such as electronic parts, semiconductors, sensors, heatsinks, optical packages, lithium ion batteries, medical parts, and in-vehicle parts. We provide products via an integrated production system from design and mold-making to mass-production.

### Solutions for our clients

We have the top share of market worlds for one particular part built in mobile phones, etc. We deliver products only to companies listed on the first section of the Japanese stock exchange and large corporations with equivalent results. We provide products under rigorous quality, cost, and delivery controls. To make difficult things possible, we constantly take on the challenge of producing highly difficult-to-make products using technologies of true master craftsmen backed by traditional skills. We meet customer demands in any field with excellent technological capabilities including "precision metal press working technology," "mold design technology" and "measurement technology."

XEROM CO., LTD. http://www.xerom.jp/ English ISO 9001 ISO 14001
1-14-20, Itachibori, Nishi-ku, Osaka City, Osaka

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible

CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13）E-mail：monob2b@mydome.jp

## "Meguru" electric vehicles

G O J T

**Key features of the product**

1. Japanese-style original design
2. High technological capabilities of sheet metal craftsmen
3. Hand-made one by one

"Meguru" electric vehicles are electric taxis mainly developed by local companies in Osaka. The electric vehicles are manufactured by making full use of the techniques of master craftsmen. The traditional Japanese design is best suited for taxis for tourism. They can be charged from a household outlet.

### Solutions for our clients

As a prototype manufacturer specialized in sheet metal working, we have developed and prototyped consumer electronics, medical equipment, miniature electric appliances, and small hardware parts. We are currently pursuing a project to manufacture electric vehicles. We can perform in-house not only sheet-metal working and machining but also design in order to flexibly meet customer demand. We have established an integrated in-house system for controlling the flow of such processes and, thus, can realize low-cost cost production and quick delivery.

Yodogawa Works Ltd. http://www.yodogawa-ss.com/ English ISO 9001
1-13-6, Yakumonakamachi, Moriguchi City, Osaka

## Machine parts processing

G J T

**Key features of the product**

1. Single item, small-lot processing
2. Quick delivery
3. We have a plant in Vietnam that increases cost competitiveness.

Based on knowledge and experience we have accumulated over a long period of time, we manufacture all kinds of machine parts from small to medium size, such as shafts, flanges, bearing cases, and brackets, by placing importance on high accuracy, quick delivery, and reasonable prices.

### Solutions for our clients

We process simple parts using simpler methods and complicated parts using as simple of a processing method as possible, using a combination of general-purpose lathes, NC lathes and machining centers. Thus, we can provide high-accuracy processing of singular parts in small lots with quick delivery. And through a network of subcontractors, we can provide finished products with surface treatment, etc. We can process all kinds of steel grades including SS400, S45C, SUS, aluminum, titanium, and hastelloy. We do all welding in-house and can handle any kind of material and shape. Moreover, we make constructive proposals for drawings presented by customers and offer optimal processing methods and prices.

SAN-EI-SEISAKUSHO Co., Ltd. http://www.san-ei-seisakusho.jp/ English ISO 9001
6-5-68, Izuo, Taisyo-ku, Osaka City, Osaka

## "PIASTA" highly corrosion-resistant Bi-metal drill screw

O J M

**Key features of the product**

1. Corrosion resistance of austenite stainless steel
2. Drilling and Tapping performance of hardened steel
3. Realization of working efficiency and reliable joining

Since dissimilar metals are combined in one screw, each metal demonstrates its properties well. During installation, the super-hardened steel makes work speedy. Once installed, the corrosion-resistant stainless steel guarantees reliable joining. These highly corrosion-resistant Bi-metal drill screws have been highly rated by users.

### Solutions for our clients

The screws are most suitable for joining roofs and exterior wall materials of buildings that require corrosion resistance, particularly structures in coastal regions exposed to sea breezes, chemical plants that emit corrosive gases and areas where acid rain is intense. Normally, despite its good corrosion resistance, stainless steel has low cutting performance and requires drilling work in other process, resulting in poor working efficiency. Conversely, hardened steel drill screws that can be installed in one step have poor corrosion resistance. With the use of drill screws made of composite metal, which bring together the advantages of two kinds of steel, we offer reliable joining that guarantees both workability and high corrosion resistance.

PIAS SALES CO., LTD. http://www.pias-vis.co.jp/ English ISO 9001
4-3-44, Shinkitajima, Suminoe-ku, Osaka City, Osaka

## Industrial rubber products, extruded products, resin and metalworking technology

T M

**Key features of the product**

1. Processing of urethane, teflon, nylon and various other types of rubber / resin materials
2. Precision parts for industrial machinery (Packings, rollers, shutters, etc.)
3. Medical care products and robot parts (Training equipment, covers, brackets, etc.)

We have the technology for processing industrial rubber and resin material products, including various types of rubber plates and rollers, molded products, and extruded products. Moreover, we apply our accumulated technologies to the processing of precision parts used for factory automation equipment such as electronic packaging robots, as well as the manufacture and marketing of training equipment for rehabilitation.

### Solutions for our clients

Since the founding of the company, we have continued manufacturing precision parts used for industrial machines and plant automation equipment, as well as heavy goods transport equipment. The assumed customers come from a wide range of fields including machine tools, automobile and electrical equipment industries, education research institutes of universities, and the heavy goods transportation industry. We have a variety of machine tools and precision measurement equipment, and can accept orders from a single item to commercial production, and quickly deliver products at low costs. We can also provide integrated production of products made of industrial rubber, resin, and metallic materials.

IZUMO Co., Ltd. http://www.izumo-web.co.jp/ English ISO 14001
3-9-18, Shinomiya, Kadoma City, Osaka

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible

## Laser cutting and design

G J

**Key features of the product**

1. Can manufacture your original design products.
2. Can manufacture the world's only products.
3. It is not necessary to make molds.

We put the silhouette of portraits and mascots in the laser processing data which is used for cutting the metal. Users can use products of 3 millimeter thick as ornaments and products of 1 millimeter thick by hanging them on walls or placing them in frames, for appreciation.

### Solutions for our clients

We cut metal using laser beams to form silhouettes of city mascots and company image characters. If stainless-steel is used, our products can be placed outdoors and used semipermanently, which leads to cost reduction in the long run. Our products can be also used as mementos of individuals. For example, a couple can create a silhouette of their illustration for the commemoration of marriage. We also receive orders for creating design of Buddhist images since we have a stock of such design. Moreover, we can make original nameplates. The size of metal can be freely selected although metal is divided if the size is larger than 1200 mm x 2400 mm.

Maeda Metal Works, Co., Ltd. http://www.maekin.co.jp English
3-14-2, Shimeno, Neyagawa City, Osaka

## Digital free design (DFD)

G J T M

**Key features of the product**

1. Can make molds just as imagined (improved design).
2. Can faithfully reproduce molds from database information.
3. Can reduce costs and improve mass-productivity.

We create 3D designs of detailed, irregular and textured patterns, and perform cutting on small-diameter end mills. Contrary to conventional chemical-machining using chemicals that have many constraints, we can faithfully reproduce, enlarge or reduce molds based on data. Our system enables gradation processing that is difficult to perform by conventional etching and thus can improve product design.

### Solutions for our clients

If our DFD processing is applied to molds, texturing expenses become unnecessary and costs are reduced. Because we cut patterns simultaneously when cutting shapes, delivery dates can be shortened. Moreover, the DFD system has infinite possibilities and diversified applications because we not only can make molds but also process and reproduce handicraft products faithfully via metalworking.

NISSIN SEIKOU CO., LTD. http://www.nissinseikou.com English
1-11-2, Kashitanishi, Higashiosaka City, Osaka

## Earth-conscious press working technology

G O J T M

**Key features of the product**

1. Appearance protection sheet-less processing
2. Complete combustion burner press processing
3. Composite press technology for shorter processing

Our press working technology enables complete and clean processing of combustion burners based on an earth-conscious processing method. Moreover, we have eliminated protective sheets required in appearance processing, thus realizing clean energy-saving processing at low cost. We are highly rated by customers for design and manufacture of composite molds via a shortened process.

### Solutions for our clients

We have created a flexible production line that can handle one lot to large lots and deliver completed parts based on an integrated production system from design and prototyping to commercial production and assembly. Through the introduction of the latest production control system in conjunction with an EDI trading system, we monitor the real-time progress of processing steps, and enhance customer satisfaction via high quality control and delivery date management. Moreover, we propose antibacterial aluminum processing as extra added-value in addition to our processing technology. We have received the rationalization excellence award and other recognitions from Panasonic Corporation and other companies.

IKK CORPORATION http://www.iida-kinzoku.com/ English
1-9-12, Kasuga-cho, Yao City, Osaka
ISO 9001 ISO 14001

## LSR composite molding technology that allows insert molding to different materials

G O T M

**Key features of the product**

1. Integral molding of seals part to thin parts of different material
2. Development of a proprietary LIM molding machine
3. Development of super high-accuracy injection mechanism

To perform insert molding of different materials such as thin resin and metal, we have developed a proprietary LIM molding machine based on technological capabilities we cultivated over many years. Even when molding rubber together with decorative thin resins such as in the case of mobile phones, the machine enables rubber molding without damaging the decorated side, thus helping to make water-proof mobile phones thinner.

### Solutions for our clients

We provide customized design and manufacturing for customer applications and functions such as light electrical products, automotive parts, mobile phones and office equipment. In particular, regarding packing for protection against water, dust and sand, we can provide products that satisfy customer demands using technologies we cultivated over the years. Moreover, with the development of a proprietary LIM molding technique, we can provide high-accuracy rubber products unseen in other companies and perform composite molding of rubber and different materials in order to help manufacturers reduces the number of parts and downsize products.

KINJO RUBBER CO., LTD. http://www.kinjogomu.jp English
1-4-25, Atobe-Kitanomachi, Yao City, Osaka
ISO 9001 ISO 14001

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible

CONTACT：Osaka Core Manufacturing Technology Network（Detailed information：P13）E-mail：monob2b@mydome.jp

## Strain-free perfect circle elbow cut from a single block

### Key features of the product

1. A perfect circle ensured wherever cut
2. Identical strength in all parts
3. Elbow that can deal with erosion

Because the elbow is cut from a single forged block, it has no welded parts, deformation and irregularity in thickness, while guaranteeing remarkably enhanced safety, reliability and fluidity compared with conventional products. Used as a specimen in a development project for strengthening infrastructure against aging, its quality has been highly rated.

### Solutions for our clients

Since mechanical processing allows us to make highly accurate products of the same size, our products have been used as specimens by the research institutes of national universities. Because elbows were made to design under this method for the first time, it is expected that research and development of elbows, which has little progressed so far, will advance exponentially in the future. Since the product can be cut into a "perfect circle" wherever is cut, it increases flow efficiency and thus largely contributes to energy-saving.

NODA DIE MARKER Co., Ltd. http//www.nodakanagata.co.jp/ English ISO 9001
3-38, Takasago, Takaishi City, Osaka

## "DK-coat Infinity" inorganic ceramic coating

G O J T M

### Key features of the product

1. High thermostability
2. High durability
3. High safety

DK-coat Infinity is a nontoxic, nonhazardous next-generation ceramic coating that is made only of inorganic material and contains no organic materials. The coating has antibacterial and antifouling effects, complies with standards for food contact substances, and has good corrosion resistance, chemical resistance, thermal conductivity, and electrical insulation properties.

### Solutions for our clients

DK-coat Infinity is not viscous and offers good durability but contains no PFOA, which is suspected of being a carcinogen. Since DK-coat Infinity can be easily washed and has good thermal conductivity, it is attracting attention as a next-generation coating for safe cooking utensils used with food. In addition, the coating is expected to be used in various fields as, for example, it enables the use of specialized products at the highest allowable temperature limit of more than 450℃.

DAITOH CHEMICAL CO., LTD. http://www.daitohchemical.jp/ English
501-3, Kitaamabe, Mihara-ku, Sakai City, Osaka

## Vacuum heat treatment technology

G O J T M

### Key features of the product

1. High vacuum heat treatment (0.1 to $10^{-5}$Pa)
2. Treatment of large materials (H760mm x W760mm x D1,200mm)
3. Quick delivery by working around-the-clock, seven days a week

Metal heat treatment refers to "hardening," "softening," and "attaching". "Hardening" means quenching, ion nitriding, etc.; "softening" means annealing, solution, etc.; and "attaching" means soldering, diffusion bonding also known as “thermo compression bonding,” etc. We heat and cool metals in a vacuum to give them hardness, toughness, and corrosion resistance.

### Solutions for our clients

Compared with conventional treatment systems, our vacuum heat treatment can prevent unnecessary chemical changes and oxidation. Therefore, it is the best heat treatment method for metal products including stainless steel and titanium, which can add high values. In particular, the ion nitriding that hardens metal surfaces with nitrogen ions in the low temperature range, causes little distortion and completes the process in a short time by maintaining the surface conditions of metals. Moreover, ion nitriding needs no post-processing and the composition of nitrided case and gas ratio, which cannot be achieved by other nitriding processes, can be freely controlled. In addition, ion nitriding can also enhance abrasion resistance and corrosion resistance.

HATTA KOGYO CO., LTD. http://www.hatta.co.jp/ English ISO 9001 ISO 14001
2-18-40, Hattanishimachi, Naka-ku, Sakai City, Osaka

## High-quality special steel products, high-precision machined products

G O J

### Key features of the product

1. High-quality bearing steel products, high-strength non-heat treated steel products that require no heat treatment process
2. Ultrahigh-precision processed products of micron precision
3. Long shafts

1. We provide high-quality special steel products such as high quality bearing steel products and high-strength non-heat treated steel products that require no heat treatment process.
2. We provide ultrahigh-precision machined products such as spindles with a processing accuracy of 2μm.
3. We provide long shafts (the length is not more than 2800mm) with a processing accuracy of 30μm.

### Solutions for our clients

・We have several advanced steel product processing technologies that other companies do not have.
To meet customer needs for a delivery of a large quantity of products as quickly as possible, we have developed a proprietary processing system based on a series of reforms of facilities and processes.
・We make proposals based on proprietary technologies for contributing to quick delivery and cost reduction for customers.
We have developed a technology of "processing bearing steel products using commercially available chips instead of using forming tools" to realize shortened delivery time and cost reduction. We also have a technology of cutting "composite round bars made of steel material and special resin". Moreover, we have developed a technology of cutting and processing pieces from long materials that are high frequency-quenched after the heat treatment process to realize quick delivery and cost reduction.

HAYASHIDA SPECIAL STEEL Co., Ltd. http://www.hssk.co.jp/ English ISO 9001
4-12-14, Imabayashi, Higashisumiyoshi-ku, Osaka City, Osaka

Good planning capability | One-of-a-kind technology | Made in Japan | Trial production possible | Mass-production possible