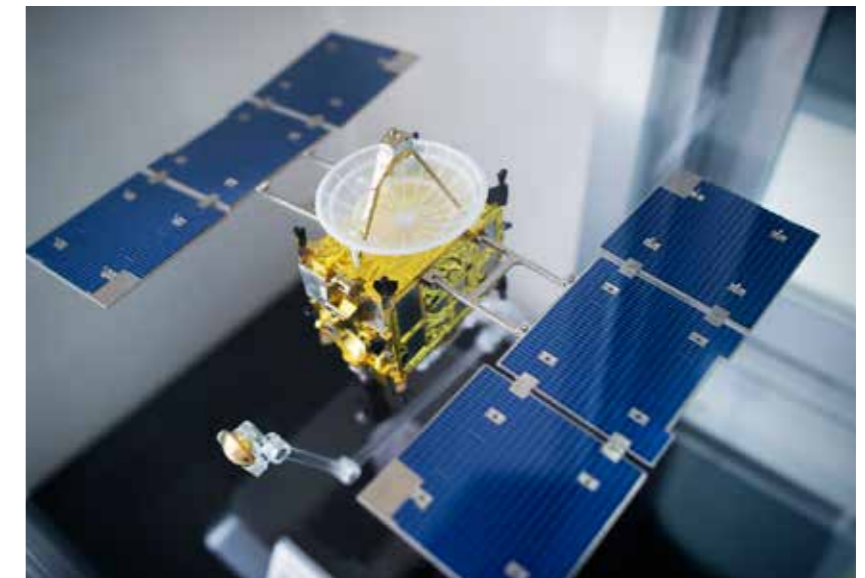




# AT THE FRONTLINE OF ANIMAL HEALTHCARE, A METAL COOK APPEARED

*KOBAYASHI PRECISION INDUSTRY CO., LTD.*

A wide range of orders—from the semiconductor to the automobile industry—reach KOBAYASHI PRECISION INDUSTRY CO., Ltd., where we work with a variety of metals. Constantly challenging new fields, our company can also show for supporting JAXA’s “Hayabusa” project in the past. Furthermore, we take on development of original products and have therefore created small-breed dog implants in cooperation with Nihon University. In the field of animal treatment, there is a definite need of medical equipment for small-breed dogs. Our product completely reflects this need and as an improvement to the current state, there is a big demand to be expected in the field of animal treatment.



High technical skills to support Japanese space industry

Unlimited in industry & genre  
– A metalworking all-rounder

KOBAYASHI PRECISION INDUSTRY CO., Ltd. is an exceptional company, skilled in a variety of metalworking. Furthermore, our diverse contract branches cross over 10 different fields, including semiconductors, automobiles and robots. Since its establishing in 1980 our company has received constant approaches for various consultation as a result of our determined attempts towards innovation. Due to its connection to the needs, the gathering of information “is regarded as our company’s biggest strongpoint”, says President Masazumi Kobayashi. Building connections to many industries our company also gained big results on the output. Kobayashi, who deeply wished for an access to the aerospace industry has expressed this desire on several occasions. As a result, our company received a request from JAXA (Japan Aerospace Exploration Agency) and assisted in the world’s first retrieving of samples from the asteroid Itokawa. The project of disassembling the return capsule was a splendid success. At present, we are aiming at entering into the airplane industry. With the goal of manufacturing jet engine components, we already introduced an automatic production system in our factory, combining a five-axis manufacturing machine and robots. For jet engines, Titanium and Inconel, stable at high temperatures, are used.

Prototype of implant for small dogs (image of implant being placed)



Implant for small dogs



Each is extremely difficult to shape and demand a high level of knowledge and technical skill when manufacturing. However, both are common materials for our company. Especially for Inconel, we achieved success in having received orders from oil drilling companies and in cutting the material for over 20 years. "We seem to be battling with the worlds' resources. To achieve the best manufacturing imaginable, we think about how to cook the raw materials. Herein lies the attraction of craftsmanship." (Kobayashi)

Development of an unprecedented, pioneering small-breed dog implant in cooperation with Japan's leading veterinarian

In recent years, our company has also taken on the development of original products. The first product to be born was the small-breed dog implant. At present, oversea manufacturers hold an overwhelming share in animal implants. However, the big difference is that in contrast to Japan, where small-breed dogs are largely popular, in overseas large-breed dogs are favored. Among the products for small dogs, there are many which are insufficient in their functionality, still their price takes up one quarter of the total surgery costs. Nevertheless, the state of Japan's animal treatment is that foreign products have to be used.

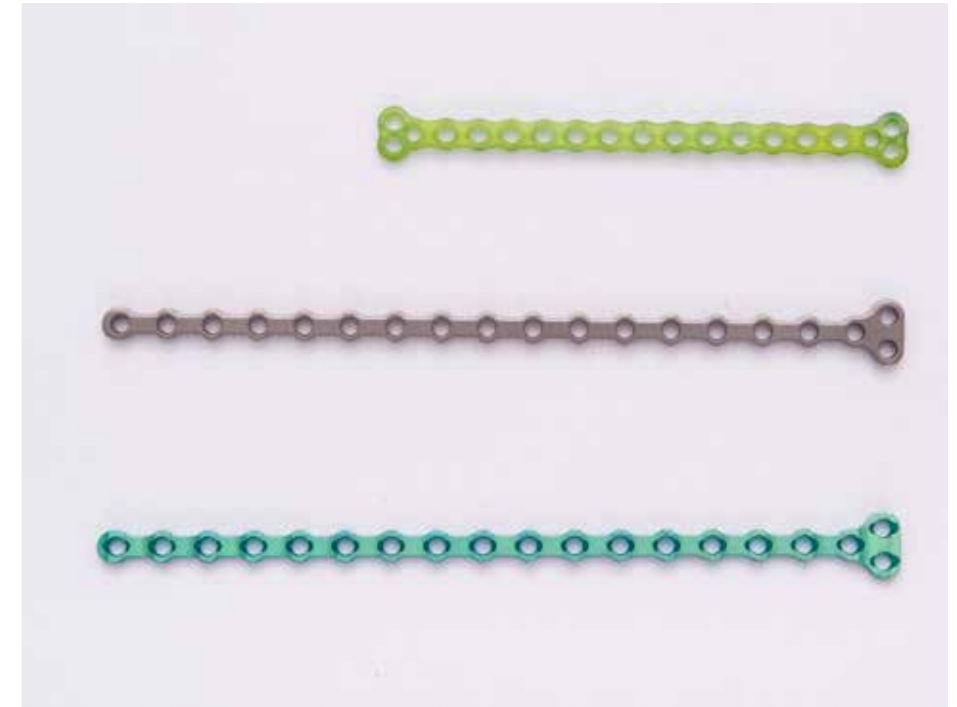
In the beginning, our company formed a consortium with several neighboring industrial technology companies as well as public research institutes, and experimentally developed artificial bones made of Titanium for application in the human body. Entering into the world of medical business was severe, but we gathered data concerning the possibility of application in animals and henceforth have attended to animal treatment. When Kobayashi talks about "fortune", he means the encounter with the veterinarian Professor Edamura Kazuya (Nihon University College of Bioresource Sciences), one of Japan's few surgeons specialized in small animals. Edamura as a specialized surgeon is an expert in animal implants and holds a big interest in reducing the costs of medical treatments as well.



Titanium implant screws for small dogs



No coloring agent was used but an oxidation treatment was made on the implant screw, to moderate the light reflected by the metal



The process of making a trial implant plate for small dogs taking into account fully the needs of the animal medical environment



Landscape of factory



Medical equipment







Automated production system integrating a 5-axis machining tool and a robot

Concerning the development of “Made-in-Japan” high quality, reasonably priced implants for small dogs we started a research and development cooperation with Nihon University.

Regarding plates and screws for bone fracture treatment in small-breed dogs, a thorough insight into the needs of the university’s animal hospital became the key to development and revealed the weak points of existing products. There are two varieties of screws fixing the plate to the bone: cortex-screws that possess an adjustable insertion angle and high fixation-power locking-screws. To reposition a bone it is essential to insert screws in different angles, therefore the freely adjustable cortex-screws possess a wide adaptation range. However, since cortex-screws have only low fixation power and a high risk of coming loose, veterinarians such as Edamura called for a reliable locking-screw they could use in all cases.

Maintaining high flexibility while providing strong fixation powers is extremely difficult. Nevertheless, our company made the decision to daringly undertake the task to create this much-needed product. The road to development was steep and paved with recurring experiments and failures. After scores of micro adjustments, we finally reached our goal. Our product answers the call in every detail. Because of its unequalled structure, it is expected to become the new standard in small-breed dog implants.



Possess the processing experience of a great variety of metal materials

### “Japan quality” brings a new style to the animal healthcare industry

In American households, large-breed dogs are commonplace, while a stable popularity of small-breed dogs is observable with celebrities. Since an American and European demand for small-breed dog implants is certainly to be anticipated, our company is placing a foothold on launching this product onto the market.

While competing with the world, Kobayashi is of the persuasion that the biggest weapon is unmistakably the extent of “Made-in-Japan” quality and safety. Therefore, every product is manufactured nationally and the quality thoroughly controlled by our inspection division, using 3D-measurement instruments. In regards to safety—since the product is inserted into the body—Titanium is used for its high biocompatibility and all colorants are omitted. We seek high strength and durability. We have realized a level surpassing existent products. In addition, Kobayashi is making the best use of our company’s strongpoints in reducing unnecessary costs by hiring only the best and



Masazumi Kobayashi, President of KOBAYASHI PRECISION INDUSTRY

therefore intensely lowering the selling price.

Apart from implants, the field of animal healthcare is also in definite need of medical equipment for small-breed dogs. Continuing the development of demand-oriented products and creating new styles in the world’s animal healthcare industry is what our company aims for.

interview & text by Syo Otaka photos by Ryogo Shioda

### FREE PRODUCT SAMPLES



For a limited time offer to Prorechnology Japan readers, we will give FREE samples (shipping fee included) to the first 10 companies. If you wish to receive a sample, the QR code will take you to the web page where you can fill out a form: for each samples.



### ■ Prototype of Implant plate for small dogs (Left)

The product on the picture is for small dogs, however, please consult us as it can be adapted to big dog types. We also do contract manufacturing.

### ■ Machining sample by 5-axis machining (Right)

This titanium bone was made from a 3D scanning of a real bone and using reverse engineering.

### Company profile

**Company Name:** KOBAYASHI PRECISION INDUSTRY CO., Ltd.  
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**President:** Masazumi Kobayashi  
**Founded:** 1980 / **Number of Employees:** 22  
**Website:** www.kobasei.com



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