Total.170 2024 SPRING

Interview on Manufacturing EV Transition of the XT Series XTL-8:The Answer to the Future of Shaft Work

1)

COOM

WORK&SOUL Kayanuma Ironworks Corporation

information Company Initiation Ceremony FY 2024 / Strolling Through TAKAMAZ

Traveling the Hokuriku Area to Experience Craftsmanship Each craftsperson has a unique style. Visit Kutani pottery studios to tour craftsmanship.

#### [Cover photo]

Location: CERABO KUTANI The cover photo was taken at Kutani Ceramic Laboratory, commonly known as CERABO KUTANI, designed by Kengo Kuma. The building exhibits harmony of the exterior walls made of clay used for making Kutani ware and the wood texture typical of Kuma's architecture.

[Model] Anna Tauch



TAKAMATSU MACHINERY PR Magazine Spring 2024

## **EV** Transition of the XT Series **XTL-8: The Answer to the Future of Shaft Work**



MEX Kanazawa 2024 (the 60th Machinery & Electronics Exhibition in Kanazawa) "Rise to the Next Stage of New Technologies!" will be held at the Ishikawa Industrial Exhibition Hall from May 16 to 18, 2024. At this trade show, our new XTL-8 will be put on exhibit. As the trade show approaches, we'd like to delve into the characteristics and features of this new product by interviewing two members who were deeply involved in its development.

To begin with, please tell us about the background that led to the development of the new XTL-8 which is to be exhibited at MEX Kanazawa 2024.

#### Manager of Research and Development Division Technical Development Dept. Wada

Looking at market trends, it's clear that companies are working on responding to the transition to electric vehicles (EVs). Companies thinking of adopting new equipment are focusing on equipment related to EVs. This means that needs for conventional machines dedicated to parts for combustion engine cars are declining while investment needs for equipment that can also be used to machine EV parts are increasing. Our customers want equipment that are not only capable of machining conventional parts but also have additional features. Large companies are especially interested in machines that contribute to achieving SDGs and carbon neutrality.

Until now, many of our machines were delivered to customers who manufacture engine-related parts, but when we look at the market with these trends in mind, it seems that customers are waiting for the best timing to make new equipment investments. I believe that this indicates that demands directed toward us are for drive system parts, parts required for replacing an engine with a motor, and suspension and steering system parts.

#### **General Manager** Nagoya Office Domestic Sales Dept. Aoji

The engine produces power, the transmission transmits that power, and that's how a car works. We're currently highly dependent on the transmission field. Being that the

transmission field consists of many parts, our machines are being used by many customers for machining transmission parts. The transition from gas cars to EVs also means a reduction in the number of car parts, creating a situation where competitive companies have no choice but to take on shafts. This is why the sales division requested the development of machines with a competitive edge.

#### Wada

Some EV parts have been integrated to reduce weight, resulting in longer shaft workpieces. This in turn results in some parts being too long for our conventional machine sizes. Machining of slightly long shafts is difficult on our standard machines. But then again a machine that is one step larger is too big and too costly as well. To solve this issue, we came up with the idea to create a machine with a size in between those sizes, and make it simple so that it can be offered at a reasonable price zone, and this is how the development of XTL-8 started. In the discussions on the direction of development, there were opinions that the new machine

should be user-friendly and that it should be reliable. So the units of our popular XT-8, as well as its basic structure, were adopted for XTL-8. The precision of this new machine is assured by these reliable units and its specifications were upgraded by adopting the latest control equipment and motors.

#### While other machine tool manufacturers are also coming up with machines for longer shafts, what are TAKAMAZ's competitive advantages?

#### Wada

Its price is competitive of course but I want to stress that the new machine's machining ability and versatility are high too. Also, it's easy to use, has high workability, and features a wide range of automation possibilities.

#### Aoji

This machine is definitely highly reliable since it's based on the XT-8.

#### Wada

The XTL-8 has a simple structure. Yet it has been creatively designed and has many advantages, such as design that does not compromise the machining range. Aside from structure, it also has features that differentiate it from competitor machines, with many ideas for user-friendliness, such as the tailstock. For example, the tailstock



#### And this awaited XTL-8 will be launched at MEX Kanazawa 2024.

#### Aoii

The prototype was exhibited at last year's Mechatronics Technology Japan (MECT) 2023 held from October 18 to 21. Customers handling shaft work expressed strong interest in the machine and also noticed that



the machine is carefully designed for user-friendliness. We improved the machine by reflecting all the requests we received at MECT 2023, leading to the mass-production version that will be exhibited at MEX Kanazawa 2024.

#### Wada

We're now in the midst of preparing for the market launch by MEX Kanazawa 2024. We need to prepare the instruction manuals, sales promotion tools for enhancing the sales staff's understanding of the machine, and the list of maintenance parts. We also have to prepare 3D data used in creating designs tailored to customer requests. Completing the prototype was not the goal. Our busy days will continue as we prepare for the market launch. In addition to the XTL-8, we're actually preparing to launch another XTL series machine capable of compound machining around the same time and hope it will catch your attention as well.

The XTL-8 is the answer for machining longer motor shafts. We are proud to introduce this machine with TAKAMAZ style features that meet customer needs concerning SDGs, carbon neutrality, and EV transition. We hope you visit our booth at the Ishikawa Industrial Exhibition Hall during May 16 to 18, 2024 and see our machine first hand.

• The machine has a maximum turning length of 600 mm. It combines a highly rigid square box-way slide construction with a  $\varphi$  100-mm spindle, and features a tailstock as standard. It can share chucks and toolholders with the current XT Series machines.

• The machine construction allows machining over the full Z-axis stroke even with special high chuck specifications.

• The energy-saving level selection function and idle stop function can be used to reduce the environmental load and running costs.

• With the automation specifications, the FANUC control loader improves working convenience during setup by the loader teaching function and tool offset support function, data of the machine status can be saved per workpiece, and traceability of workpieces can be achieved.

#### Machine Specifications

Chuck size	Collet,8 (10) inch	
Spindle bearing I.D.	¢100(120) mm	
Spindle speed	Max.4,000 (5,000) (3,000) min <sup>-1</sup>	
Туре	8-station turret (12-station turret)	
Max. stroke	X:190 Z:600 mm	
Rapid traverse rate	X:18 Z:24 m/min	
Spindle motor	AC 15/11kW : Ø100 4,000min-1	
	AC 15/11kW : Ø100 5,000min-1	
	AC 15/11kW : Ø120 3,000min-1	
L×W×H	1,840×1,860×1,880(2,400*) mm	
Controller Specifications	Oi-TF Plus	

\*: F loader specification (): Option

Visiting Our Customers

### WORK & SOUL



#### vol.005

Kayanuma Ironworks Corporation

# CHANGE THE FUTURE

-Transformation From a Small Factory-

Operating a machine that has been supporting the company for nearly 50 years alongside the latest multi-tasking machine that operates 24 hours a day. While retaining the aspects of a small factory, the management vision for surviving the future is taking form.

> Within the factory, multiple machines are operating, including a TAKAMAZ machine that has been in operation for nearly half a century and the latest multi-tasking machine.

# Factory reformation starting from organizing and tidying up Visualize how automation will change work!

As a partner company of the large bearing manufacturer Nippon Thompson Co., Ltd., Kayanuma Ironworks Corporation manufactures rod ends and needle bearings for cars, motorcycles, and general industrial machines. The business was founded by the current president's grandfather in 1927, starting out with manufacturing and selling pirn winders. This business transformed into a joint-stock company in 1981, changing its name to Kayanuma Ironworks Corporation. Since then, the company has grown and now operates three factories. The current president, Mr. Kayanuma, has been in his position for 14 years. We asked Mr. Kayanuma about the present and future of his company which continues manufacturing in the foothills of Mt. Fuji.

#### I heard you assumed your current position around 2010. How did you feel at the time?

Honestly speaking, more than anything, I was anxious whether I could do the job or not. Our equipment was old and I didn't have much experience at the time so I felt that our future wasn't bright. For 5 years or so until my brother, currently the Managing Director, joined the company, I was managing the business while battling the fear that our company may not survive. Once he joined, his support in the technical and many other areas allowed me to focus more on management. This made a big difference.

I hardly have anything to worry about now as a manager, but we need to think about new equipment investments, and we have to acquire and train workers.

### How are you addressing those challenges?

One of the very specific examples is that we've been working on tidying up the factories. People have the impression that factories are dirty and messy, and often that's really the case. But I'm convinced that it's important to intentionally focus on organizing and tidying up your factory. It wasn't my priority in the past but once I began focusing on organizing and tidying up, we were able to recognize items that were necessary and those that weren't, and this began to free up space. Those regained work spaces lead to new productivity, and it helps to have a clean appearance when recruiting young workers.

While working on acquiring and training workers, it's essential for future factory management to accelerate the efforts to reduce the type of traditional tasks that can be performed only by experienced, skilled workers. For example, we're planning to reduce our defect rate and improve productivity by promoting automation and process integration, like reducing the number of processes from 8 to 3. This is why we just recently prepared a 10-year equipment investment plan. It's extremely difficult for a company of our size to continue making equipment investments for 10 years but I'm determined to make it happen with some help from our partner companies.

What are your company's strengths and competitive advantages that have made it possible for you to steadily grow so far and enable continued equipment investments? Since the time of the previous president, we've been accepting all orders regardless of their content. Our stance has been to never turn down any order. We hear from our partner companies that they see us as a place that can take on the most difficult works. I feel that this recognition has led to building customer trust, enabling our company to survive this far.

The technical side of the business is now mostly handled by the Managing Director and the Production Section Chief. We need to further share responsibilities, transforming into an organization that handles the technical area by the entire company. We've drastically changed in the past 5 years, making the transformation from the conventional small-scale Japanese factory. Instead of relying on one person, the company as a whole has to be able to manage the business. People seem to look at only the good sides of automation with robots but another side of automation is that it displaces jobs. This is why we must become able to do work that can't be done by robots, work that requires the human brain. I've been talking about this often lately in our morning meetings.

#### As you further develop your plan for equipment investments, we hope to propose optimal machines that meet your needs. What do you like about TAKAMAZ products and services?

The first machine we bought from TAKAMAZ was Meriter. It was in 1975, and we're still using the machine. It's been nearly half a century but we've managed to maintain it on our own and it's still working fine. We actually bought machines from all sorts of manufacturers at one point when the previous president was promoting equipment investment. Looking back, I'm amazed at how well we did in operating machines of multiple manufacturers without getting confused but this allowed us to understand the characteristics and features of each manufacturer. So from now on, we'll be able to choose the optimal manufacturer for each purpose. In terms of TAKAMAZ products, would that mean our small- and medium-size machines? When making equipment investments, what we need is a manufacturer that makes proposals from our perspective. In that sense, TAKAMAZ is perfect because your staff takes



#### KAYANUMA IRONWORKS CORPORATION

our perspective and they're very helpful. When we adopted two of your machines before, your response was so swift despite our sudden request, we were really thankful. In addition, what we'd like to expect from lathe manufacturers is technical advice on cutting, and in that aspect as well you have been very helpful.

As Kayanuma Ironworks tackles changes for future growth, TAKAMAZ will carefully listen to their needs and strive to do our best to provide the best support we can.

[Kayanuma Ironworks Corporation] 2809-4 Shimoya, Tsuru-city, Yamanashi TEL.+81-(0)554-43-1166 FAX.+81-(0)554-43-1168 President : Kazuki Kayanuma Capital : 15 million yen Employees : 45 Establishment : 1927 Business activities : Manufacturing of rod ends and needle bearings for cars, motorcycles, and general industrial machines

### information

### TOPIC **Company Entrance Ceremony of 2024**

The company entrance ceremony for FY2024 was held at our headquarters on April 1. Seventeen new employees have joined us this year. The ceremony opened with the recitation of our slogan, and new employees received warm words from the Chairman and President through their speeches. "Cherish your friends, remember how you feel now, and do your best! I'm looking forward to seeing you grow in our company!' (excerpt from the Chairman's speech) "As a fresh new employee, I hope you don't hesitate to ask any questions you may have. Your questions lead to the growth of your seniors and superiors. Boldly asking questions will result in a win-win situation for the growth of you and the company." (excerpt from the President's speech)



The ceremony was perfect for celebrating the new beginning of our new employees, and it was refreshing to see their earnest attitude.

#### What are your interests?



### Strolling Through TAKAMAZ / Nagoya Office Kai Nakayama

This April marked the 10th anniversary of Mr. Nakayama becoming a TAKAMAZ member. After working for seven years at the Electrical Wiring Section of the Manufacturing Department, he worked at the Assembly Section prior to becoming the member of the After-Sales Service Section of our Nagoya Branch starting in April 2023. His life is centered on work at the moment as he's still getting used to his new position but he takes good care of himself by going to a sauna from time to time, enabling him to

Although his duties have completely changed, it's been very rewarding to be able to make customers happy, like when he responds to urgent repair needs.

enjoy work with a positive attitude.

The Nagoya Branch is a large branch with 15 members, who all get along well. Experienced coworkers have been very helpful and supportive by giving advice on tasks and sharing information with Mr. Nakayama who has just begun his second year in the After-Sales Service Section.

He mainly visits customers within Aichi and the two neighboring prefectures, but he sometimes travels far including Hokkaido, 3 Fukushima, Fukuoka, and Miyazaki. He enjoys his business trips.





### Traveling the Hokuriku Area to Experience Craftsmanship

## - CRAFT CONSCIOUS -

### Each craftsperson has a unique style. Visit Kutani pottery studios to tour craftsmanship.

Kutani ware is one of the signature traditional crafts of Ishikawa Prefecture. Highly recognized worldwide, Kutani ware features picturesque designs and stunning colors called Kutani Gosai. Kutani ware has flourished in the Kaga area of Ishikawa, home to two craftspeople designated as Living National Treasures, Yasokichi Tokuda III and Minori Yoshita, and a great number of studios where craftspeople tirelessly refine their skills. Visit the Kaga area to experience craftsmanship!



It has long been said that Kutani ware can't be talked about without talking about its overglaze paintings. With each studio having a unique style, Kutani ware features a wide range of designs.

If you were to go on a Kutani ware tour, we recommend CERABO KUTANI as your first destination. The process of producing Kutani ware is divided into many specialties like the production of bisque pieces and overglaze painting. At this facility, you can see how the clay is prepared. It's also a great place to find your favorite craftsperson as its gallery features the works of a variety of studios.





#### TAKAMATSU MACHINERY CO., LTD. HEAD OFFICE & PLANT

 TEL +81-(0)76-207-6155 FAX +81-(0)76-274-1418
ASAHI PLANT 4-13 ASAHIGAOKA HAKUSAN-CITY ISHIKAWA JAPAN. 924-0004 TEL +81-(0)76-274-0123 FAX +81-(0)76-274-8530

TAKAMATSU MACHINERY U.S.A., INC. CHICAGO HEAD OFFICE 1280 LANDMEIER ROAD ELK GROVE VILLAGE, IL 60007 USA TEL +1-(0)847-981-8577 FAX +1-(0)847-981-8599

TAKAMAZ MACHINERY EUROPE GmbH IM HÜLSENFELD 19, 40721 HILDEN, GERMANY TEL +49-(0)2103-789-4882 FAX +49-(0)2103-789-4883

TAKAMAZ MACHINERY (HANGZHOU) CO., LTD. HANGZHOU HEAD OFFICE NO.6800, JIANGDONG 3RD ROAD, JIANGDONG INDUSTRIAL PARK XIAOSHAN, HANGZHOU, ZHEJIANG, CHINA TEL +86-(0)571-8287-9709 FAX +86-(0)571-8215-3732

TAKAMATSU MACHINERY (THAILAND) CO., LTD. BANGKOK HEAD OFFICE 888/59 MOO 9, TAMBOL BANGPLA, AMPHUR BANGPLEE, SAMUTPRAKARN PROVINCE, THAILAND TEL +66-(0)2-136-7831 FAX +66-(0)2-136-7834



Once you've enjoyed all that CERABO KUTANI has to offer, it's time to visit individual studios. In this article, we'd like to introduce Kinzangama & Gallery MUTAN. It's the studio of Minori Yoshita, a Living National Treasure. An appointment is required but you' II be sure to enjoy the rich, fascinating experience at this gallery.

You will no doubt discover the amazing world of Kutani ware. If you visit the area in spring, make sure to stop by Kibagata Park! You'll be delighted with a spectacular view of vibrant cherry blossoms against the majestic Mt. Hakusan.

#### PT. TAKAMAZ INDONESIA

JL. FESTIVAL BOULEVARD BLOK AA 11 NO.30,31 GRAND WISATA TAMBUN, BEKASI 17510 TEL +62-(0)21-8261-6431 FAX +62-(0)21-8261-6430

TAKAMAZ MACHINERY MEXICO, S.A.DE C.V. AVENIDA DE LOS INDUSTRIALES 522, LOCAL 4, INDUSTRIAL JULIAN DE OBREGON, 37290 LEON, GUANAJUATO MEXICO TEL +52-477-784-0468

TAKAMATSU MACHINERY VIETNAM CO., LTD NO.76 M HOANG QUOC VIET, PHU MY WARD, DISTRICT 7 MINH CITY, VIETNAM TEL +84-(0)28-3620-5671 FAX +84-(0)28-3620-5673