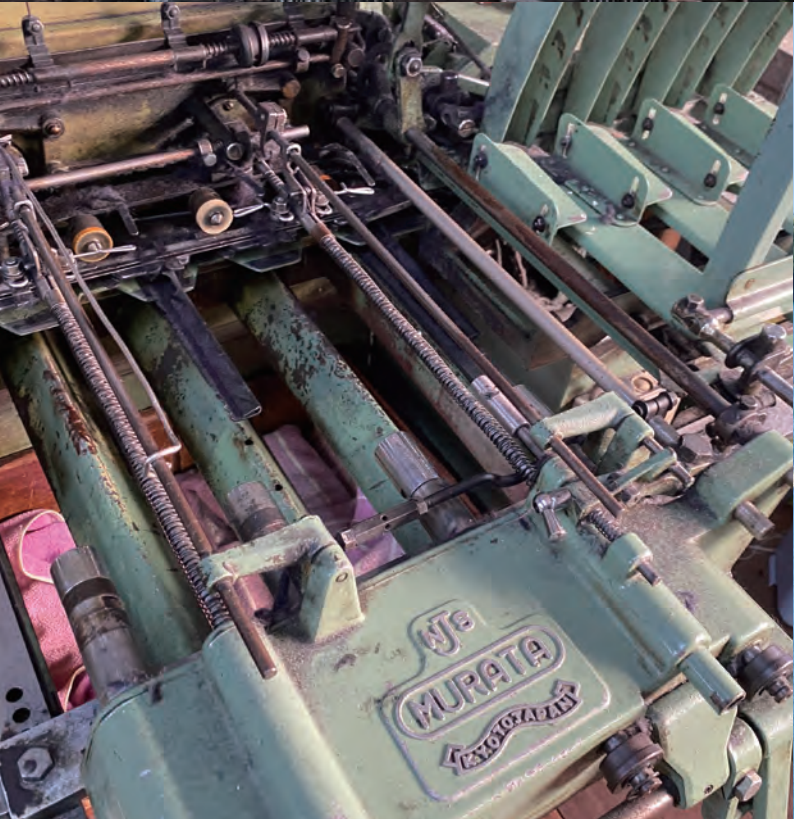


SYL

Sharing Your Life

Muratec Customer Magazine 1 | 2024 | EN



Thank you for visiting our booth at ITMA ASIA + CITME 2022.

As it was the first major exhibition held in China after the end of the COVID 19 crisis, we had our concerns about the outcome before its opening.

However, as it turned out, we received a large number of visitors throughout the event, leading to many contracts. The main attraction of our exhibit was the PROCESS CONER Alcone, our new automatic winder.

This new model was designed not only to ensure high productivity and energy savings, but also to minimize the frequency of error which requires operator intervention.

The Alcone incorporates all the technologies developed for the No.21C PROCESS CONER and PROCESS CONER II QPRO series, resulting in efficient bobbin feeding and a significant improvement in yarn dragging, which has long been an issue for us.

We are confident that our customers will appreciate the detailed, user-friendly features of this latest model when they actually use it in their plants.

In April of last year, we introduced a new corporate slogan, "Innovation. Mark the turning point."

As the turning points of innovation for the Textile Machinery Div., we have identified Mach Splicer, which was developed as a yarn splicing machine for automatic winders, and VORTEX, which uses an innovative spinning method.

Mach Splicer uses air splicing to eliminate knots in yarns that could not be

avoided with conventional mechanical knotters, significantly improving the fabric quality.

In addition, with rotational air flow, VORTEX has been able to spin yarns with far less hairiness, higher pilling resistance, and better moisture absorbency compared to ring spinning and open-end spinning.

We are proud to say that these technologies are major innovations that have marked a turning point for the textile industry to move in a new direction.

Muratec will continue to rise to the challenge of developing many more new technologies and providing products that achieve No. 1 performance in the industry, focusing on high productivity, high quality, and flexibility.

Even after the delivery of our products, we will continue to support our customers for a long time by combining our technical service staff with the Muratec Smart Support System to ensure that our machines operate at high efficiency.

As a contribution to the textile industry, which is working to solve global environmental issues throughout the supply chain, the Muratec Group is committed to reduce CO2 emissions in the production processes at all its plants and to use its expertise in sensing and motion control technologies to help textile factories around the world to save energy and further automate their processes.

We pledge to continue to be a Muratec that stays by our customers' side from machine installation to after-sales service.

Tetsuji Masai
Director, General Manager of
Textile Machinery Division



SYL 1 | 2024 | EN

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Sharing Your Life
Muratec Customer Magazine April 2024

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[Cover Photo] Special thanks to Kuzuri Keori Kogyo Co., Ltd.,

This Is Alcone

The Technology and Passion Inside

In April 2024, we launch Alcone as a new automatic winder to replace the PROCESS CONER II QPRO EX. We already exhibited it at ITMA in June last year and ITMA ASIA in November last year, and received high praise from many visitors. In this article, we introduce comments from members who promoted the development of Alcone, regarding their thoughts, technology, and evaluation at the testing stage.



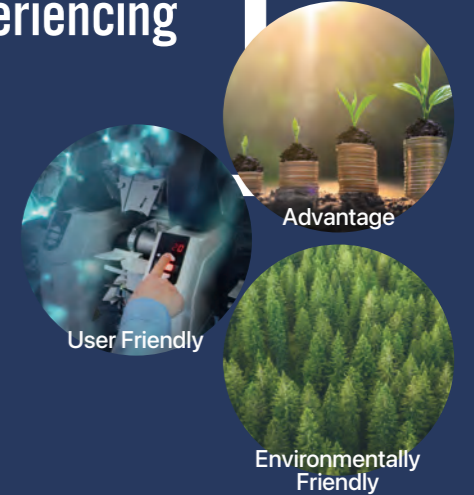
From Product Manager- Sales & Marketing

“ We eagerly anticipate you experiencing the benefits of Alcone. ”



Mr. Yamaoka

Alcone improves cleanability and operability and reduces alarms, with high productivity and energy efficiency that QPRO EX was known for. We have also strengthened our environment conservation efforts, including reduction of CO2 emissions in the Alcone manufacturing process. We are confident that Alcone has turned out to be an excellent machine. We are looking forward to you realizing the benefits of Alcone with many new features in the form of operational efficiency data.



From Product Manager-Technical

“ Each device is engineered to achieve astounding performance by seamlessly adapting its operations in response to real-time operating conditions. ”



Mr. Kawamoto

The primary target of Alcone development was to maintain stable and high productivity. To achieve this goal, we designed each device, including Continuous Bobbin Feeder (CBF), to automatically optimize its operation according to real-time operating conditions. As exemplified by Auto Balance function*, the devices on the entire machine communicate, cooperate and control each other. When the supply speed is changed according to the number of cops, the speed of the package conveyor, empty bobbin conveyor, and so on changes accordingly, thereby achieving desired control.

(*) A function that continuously checks winding progress of an automatic winder against the time required for full bobbin (Doff time) of a spinning machine, and always maintains a balance between the production progress of spinning machines and winders. A similar automatic adjustment function works for Magazine and Bobbin-tray Machines.



From Unit Design Expert

“ We have incorporated many new ideas to increase productivity and reduce maintenance work. ”



Mr. Umeoka

How to increase productivity? How to reduce maintenance work by flexibly responding to a wide range of specifications? With these as development themes for the Unit Design Department, we have incorporated many new ideas.



Design

Unit is modularized into upper, middle, and lower. The winding cradle section has also been updated for higher quality winding, including reduced vibration during winding. Only the middle unit can be pulled out, reducing physical load during maintenance work.

Motion Control

With more precise drum acceleration and deceleration control, the splicer cycle can be shortened, contributing to both productivity improvement and energy saving.

Arm traverse

Improvements in the motor and arm make it possible to achieve higher speeds.

Bobbin flow

We focused on loss caused by bobbin replacement. Alcone controls bobbin supply from CBF for each unit according to winding progress of each unit, and adjusts bobbin flow of the whole machine. Even when the lot is changed, the machine starts up faster than the conventional machine.

Bobbin release

The newly installed "Perfect Ready" function handles the yarn end when a bobbin with residual yarn is discharged from the unit, and ensures that it is held inside the bobbin top. As a result, yarn entanglement on the conveyor is eliminated, and maintenance work is reduced too.



“ From Automation Technology Expert

We achieved high development goals through teamwork.

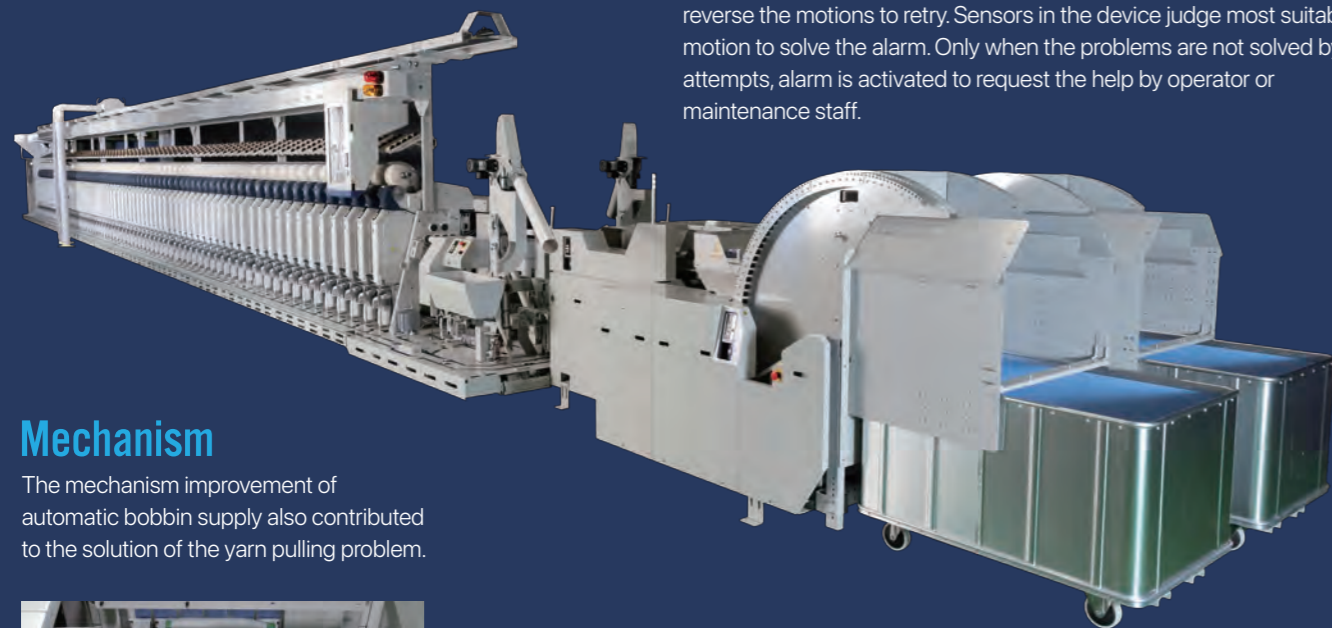


Mr. Yoshida

We tried to improve productivity with the automation technology we have cultivated. Veteran designers in each department brought their wisdom to the table and achieved high development goals through teamwork.

Less alarm

To increase productivity, we need to reduce alarms. We have included a mechanism in which various devices attempt to solve problems automatically. When the problem is found, the devices reverse the motions to retry. Sensors in the device judge most suitable motion to solve the alarm. Only when the problems are not solved by attempts, alarm is activated to request the help by operator or maintenance staff.



Mechanism

The mechanism improvement of automatic bobbin supply also contributed to the solution of the yarn pulling problem.

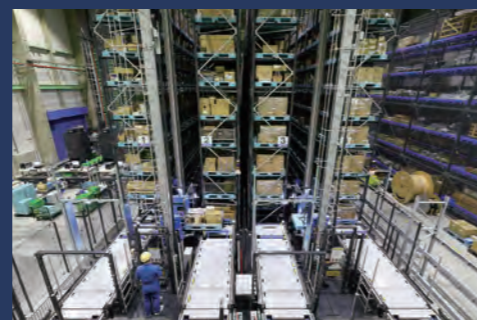


Bobbin supply

In addition, the operation and cycle of each device of CBF have been elaborated so that the efficiency can be maximized by the overall optimization rather than the partial optimization of each process from bobbin insertion to package winding. In case of coarse yarn, the cycle of bobbin supply becomes short because the number of bobbins to be sent to the unit is increased, while in case of medium to thin yarn, the cycle is lowered to increase the certainty of yarn delivery.

Synergy in Muratec

In this Alcone development, the technology that Muratec has cultivated in various fields provided hints for technical tasks. For example, the underlying technology of Factory Automation and other divisions of Material Handling played a role in reducing the size of the supply part, and as a result, it succeeded in improving the operability and safety of the winder. On the other hand, the idea of modular design adopted in Alcone influenced other divisions of Muratec. It is utilized in the new product development of Factory Automation business which requires high level of customization. In the future, we would like to create synergy by mutually incorporating our know-how and technology obtained from the diversified business development.



“ From Technical Services Expert

"Alcone's various new features are very effective



Mr. Kimura

As the support department closest to our customers, we have provided realistic feedback to product development. And we realize that the various new features are very effective in field testing.

Operability

One of the most popular features among operators is the simplification of the yarn waste collection work. New hoist with lower height contributes to improve the operation. In addition, the VOS(Visual On-demand System) "Bookmark function" will be highly evaluated when Alcone starts operating in customer factories.



Productivity

The capability of Alcone is demonstrated especially in bobbin tray. There is no doubt that the increase of bobbin supply capacity and the reduction of alarm of CBF lead to the increase of production. With the "S Feed II" function*, the bobbin can be loaded into the unit more efficiently than before, contributing to the increase of productivity.

(*) The bobbin flow is optimized by delivering only the required number of full bobbins on the conveyor. These full bobbins are delivered to winding units more efficiently.

Intelligent devices

It is also evaluated that CBF operates according to the lot information set in VOS. The retry function of AD (Auto Doffer) also contributes to improving operation efficiency.

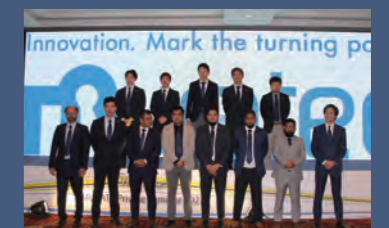
Textile Today Bangladesh magazine reported on the Alcone seminar

The globally leading textile machinery manufacturer Murata Machinery Ltd. earlier inaugurated its groundbreaking product Alcone automatic winder machine at this year's ITMA 2023 in Milan.

With a rich legacy of innovation and a commitment to delivering cutting-edge solutions, Murata Machinery Ltd. once again showcased its dedication to driving progress and empowering manufacturers to excel in a rapidly evolving landscape with the launch of Alcone for the Bangladesh market.

This textile solution is designed to optimize work methods and elevate production efficiency, quality, and sustainability. Murata Machinery has successfully combined advanced work methods in the development project, leveraging the power of innovation and industry expertise to make a groundbreaking product that meets the rapidly transforming needs of textile manufacturers while setting new benchmarks in the industry.

"Murata Machinery's 'Alcone' Auto Winder to revolutionize Bangladesh market", Textile Today Bangladesh, Sep 2023, P116



Right Choice, Bright Future

ITMA ASIA + CITME 2022

At the ITMA ASIA+CITME 2022 held in Shanghai, China in November 2023, under the theme of "Right Choice, Bright Future," Muratec introduced our latest products and technologies, such as the automatic winder "Alcone" and "CORE COLOR" that utilizes features of VORTEX. Muratec booth was crowded with many visitors during the show.

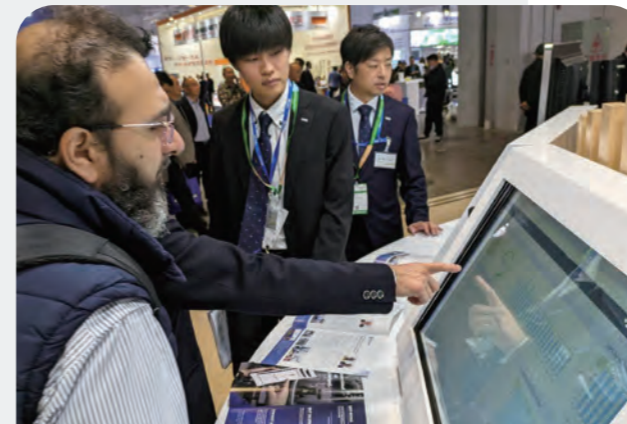


Automatic Winder

PROCESS CONER Alcone 12 spindles

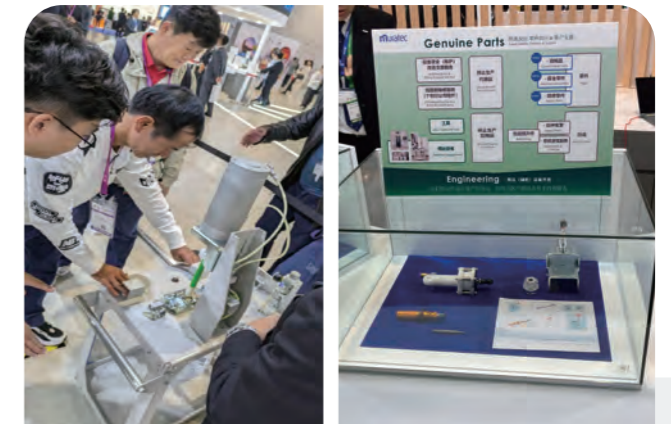
Alcone, which was first exhibited in China, was one of the products that attracted the most attention of visitors. Designed with sustainability in mind for the entire supply chain, Alcone has improved performance in every aspect like productivity, energy efficiency, operability, maintenance and cleanability from the previous QPRO series. One visitor said, "Improved Parts Feeder system attracted me so much."

▶▶▶ See P3-6



Muratec Smart Support

MSS proposed IT-based operation management, including remote monitoring and centralized management of operation status of automatic winders and VORTEX. At the booth, visitors touched actual operation screens, and experienced MSS that has become even easier to use. We felt that there is a growing need for MSS, such as "This kind IT management & solution are a current strong trend. MSS will be the must for us."



Genuine Parts

We have introduced examples of maintenance using genuine parts to use Muratec products for a long time. We also received many inquiries about peripheral devices such as semi-automatic bobbin strippers and sliver analyzers. Visitors positively commented, "Muratec's predictive maintenance solutions are truly appreciated by our factories."



VORTEX 870 EX 16 spindle

In the VORTEX area, we demonstrated spinning by recycled polyester, which has seen a surge in demand in recent years. Interest in VORTEX has further increased, including the high productivity of 870 EX, and many people were eager to hear our staff's explanation. While going back and forth to the sample area, visitors talked more specifically, like "We could feel MURATEC VORTEX as No.1 through the machine demonstration & variety of samples."

▶▶▶ See P9-10



VORTEX Yarn

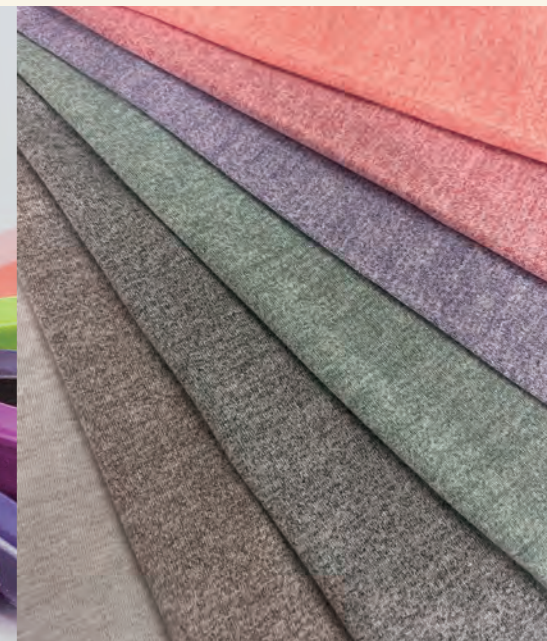
In addition to displaying applications by material, we introduced "CORE COLOR," which meets the needs of small quantities and many varieties of mélange. This is a new proposal to realize small-lot production of mélange while retaining the advantages of VORTEX yarn. The vivid colors of the CORE COLOR sample made visitors curious to know how to make it.



VORTEX x Sustainability

CORE COLOR

Optimize Production
Maximize Variation

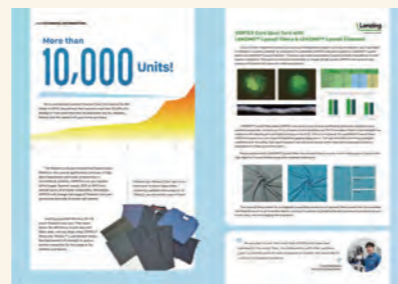


Passed 10,000 Units In The World

Once we introduced in SYL issue 1 in 2023, the delivery of Filament Core Yarn device has crossed 10,000 units all over the world. The demand is continuously increasing.

At ITMA-Asia in Shanghai (Nov. 2023), we picked up another potential to promote the Filament Core Yarn device, by putting Colored Filament in the core. We named it as "CORE COLOR".

The cover fiber is Viscose 100% (white) and the sliver is prepared by our customer in India, using Trutzschler carding machine with IDF and 1 passage in draw frame, for which, Murata keeps working with Trutzschler since many years.



Optimize Production and Maximize Variation



We promoted CORE COLOR, saying "Optimize Production" and "Maximize Variation". Usually, to produce mélangé yarns, colored fibers are mixed with white fibers in preparation process. In this case, certain volume is required to make it economical. To change colors, it takes time to clean up the entire process. Considering the loss time for cleaning, it is difficult to produce a small lots. By these points, it is difficult to produce "required production" and to increase the variation in colors.

For CORE COLOR, just white fibers are required. Color can be changed by colored filament. Since the filament is used in the process, no colored fiber is required. This ensures that no cleaning is required while changing the colors. There is no contamination, and it allows to change the color by positions. Operator needs to pay attention, but different colors in different positions can be produced in one machine.

As you can see in the photo, our engineer Mr. Nakamura has finished spinning of 7 different colored yarns and subsequently prepared the fabrics, all in just 16 working hours. Only 4 spindles are used, by setting the spinning speed of 500 meters/minute.

*I am very glad to introduce new challenge using this device.
We are proud that our filament core yarn device can be promoted for higher productivity, less splicing in the package and unique character of the yarn.
We shall try to promote something new or unique using this device.
I wish our device will create new "core yarn" market worldwide.*

Yuta Nakamura / Technical department

Easy To Produce Mélangé Yarn

For CORE COLOR, all filaments are of 56 dtex / 36 filaments. Covered by Viscose of 1.3 dtex with 38 mm. By using black filament, we changed couple of settings.

Yarn count Ne 20, 30, 40 shows the different ratio for covering and core. Ne 20 has 80% covering ratio, and Ne 40 has 60% covering ratio.

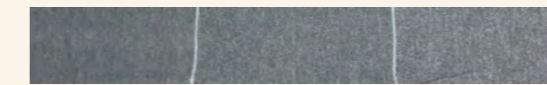
Speed variation from 300 to 500 m/min shows the difference in covering. Lower speed covers more than that of higher speed.

Viscose and Cotton cover also shows the difference. Cotton covers more. Shorter fibers have higher percentage to cover.

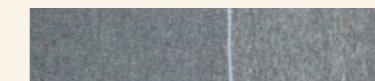
Mono filament (44dtex) shows unique surface. Coarse mono filament is covered more than multi filament.



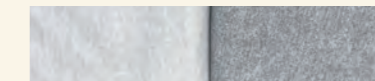
Ne 20-30-40



300 - 400 - 500 m/min



Viscose - Cotton (Ne30)



Mono F (44T) - Multi F (56T)



Mono Filament (44T)
Color Variation

NEW!!



Create New Markets In Future

We prepared more than 500 leaflets with a piece of fabric. But almost all were distributed during the exhibition. We hope our message, "Optimize Production and Maximize Variation", will be recognized as a message for sustainability, and the customers will create new markets in future.





尾州ウール

Bishu wool

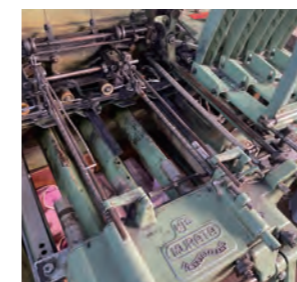
The former Bishu area prospered as a production area of silk and hemp, and from around 1600, it became a major production area of cotton fabrics along with cotton cultivation. However, the major earthquake in 1891 struck Bishu. Not only production facilities such as looms but also cotton fields were severely damaged. In the wake of the massive earthquake, Bishu area transformed itself into a woollen textile industry, which was at the forefront in those days. Thanks to the tireless efforts of its predecessors to save the production area and the westernization of people's clothes, Bishu has grown into one of the world's leading high-class woollen fabric production areas, along with Viera, Italy and Huddersfield, England.

The water quality of Kiso River, which flows through Bishu, is clean and the softest in Japan, giving woollen fabrics a good color and a soft and supple texture. Bishu wool, which is highly valued around the world, now accounts for more than 60% of Japan's woollen fabrics. There are many companies with more than 100 years history in that area. Great strength of Bishu lies in its ability to produce both yarn and products within its production area, including spinning, twisting, dyeing, weaving and organizing, and it produces a number of high-value-added textile products while responding quickly and flexibly to diversifying needs.

In order to further raise the awareness of Bishu wool, Bishu companies are actively participating in branding building activities and exhibitions. JAPAN YARN FAIR & The BISHU is the trade fair specializing in yarns held in Bishu,

and Muratec also exhibits. Shokobo Collection, which is in this exhibition and aims to develop the next generation, offers the opportunity to extend novel designs by matching designers and craftsmen. At "Milano Unica" in 2023, it was branded as "BISHU WOOL COLLECTION" and promoted the appeal of Made in Japan woollen fabrics. Awareness of the "BISHU" mark certification system is also spreading. About 600,000 certified items were distributed in 2023. In recent years, "BISHU" has been registered as a trademark in the Euro area and the United Kingdom, aiming to further improve its brand value.

"The Textile Materials Center" displays fabric samples showed at exhibitions so far. It is the largest textile museum in Japan, exhibiting about 120,000 items for a period of more than 50 years, including the latest trends.



We visited Kuzuri Keori Kogyo Co., Ltd. one of the long-established factories in the Bishu region. Established in 1912 and with a history of more than 100 years, 9 buildings are registered as national tangible cultural properties. They continue to use the Schönherr loom, which was popular in Japan around 1950, to express the texture of handwoven textiles and produces a variety of high-value-added textiles. The company also operates a

tube winding machine made by Muratec. It was a great gift for us to discover that they used our machines which were more than 50 years old. The textiles with special processing on the unique fabric of the Schönherr loom cannot be imitated by other companies.

Miso Nikomi Udon (Miso-Simmered Udon Noodle)

Miso Nikomi Udon is one of the famous gourmet dishes from the Bishu region. They mainly use Haccho Miso from the Bishu region, and their udon is unique and chewy. They are served simmered in an earthen pot with plenty of ingredients such as chicken, kamaboko, egg and green onions. When the lid is opened, miso's delicious aroma spreads. One of the pleasures is eating eggs from the pot that are being cooked.

Please enjoy Miso Nikomi Udon when you visit Bishu.



(Interview: Handmade Udon Jukai)

Division: Textile Machinery

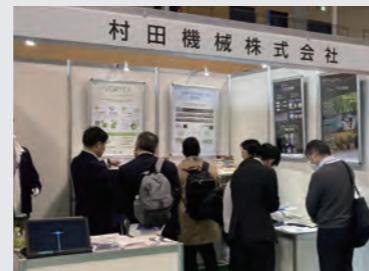
Dhaka International Textile & Garment Machinery Exhibition (Bangladesh) 2024-2-1 to 2024-2-4

It was the first time of unveiling Alcone in Bangladesh, and we exhibited one spindle machine for demonstration. The demand for bobbin tray is increasing worldwide, and it is easy to explain Alcone's benefits, so we focused on promoting bobbin tray. We are confident that Alcone's new features(Page 3-6) and its "Easy Maintenance" and "Easy Operation" concepts were appreciated by customers. As for VORTEX, we introduced fabric samples using VORTEX yarn. To increase the recognition of VORTEX in Bangladesh, we are continuously trying to approach the downstream industry, such as apparel companies. We were glad to find that many visitors know and see the VORTEX's value.



JAPAN YARN FAIR 2024-2-15 to 2024-2-16

We exhibited fabric and product samples using VORTEX yarn and a new yarn proposal, CORE COLOR (Page 9-10) at the Japan Yarn Fair held in the Bishu area (Page 11-12). In addition to being suitable for small-lot production, it attracted customers' attention because it requires less cleaning compared to other spinning methods of colored raw materials. Aiming at dyeing and weaving factories, we appealed that Alcone can combine two different winding methods (Drum Type, Arm Traver Type) into a single machine. We realized that the features of Alcone also fulfill the demands of Japanese market, which requires various specifications and high winding quality.



Vietnam International Trade Fair for Apparel, Textiles and Textile Technologies (VIATT) (Vietnam)

2024-2-28 to 2024-3-1

Though VIATT was held for the first time, it attracted many visitors than expected, from Vietnam and overseas. In addition to VORTEX fabric and product samples, we displayed Áo dài, a traditional Vietnamese costume made of VORTEX yarn. Our Áo dài attracted a lot of interest from textile and garment customers passing by the booth. We were also able to directly communicate the benefits of VORTEX to fabric manufacturers and textile trading companies, making the exhibition a very meaningful one.



Muratec Supports Kyoto Sanga F.C.

Kyoto Sanga F.C. is a professional soccer club belonging to J1, the top league in Japan. Sanga is not only one of the oldest soccer clubs in Japan, whose predecessor team was founded more than 100 years ago, but also a club that has won the Emperor's Cup (the tournament in which all Japanese soccer clubs participate). The club's color is purple. The club's name, "Sanga," has the Sanskrit meaning "buddy", as well as the beautiful "mountain and river" of its home in Kyoto.

The new home stadium, which opened in 2019, is an easy 20 minute train ride from Kyoto Station. The exterior of the stadium is inspired by the temples and shrines of Kyoto and is designed to harmonize with the nature surrounding the stadium.

When the professional team was established in 1994, Muratec became a sponsor in order to support Sanga, which is loved by people in Kyoto and is based in Kyoto, the same city as Muratec. This year marks 30 years since Sanga became a professional club.

Muratec supports Sanga again this year and hope for Sanga's success and the J1 championship.



Continually creating innovative technologies for the fulfillment of a prosperous society



Textile Machinery
-Automatic Winder
-VORTEX Spinning System



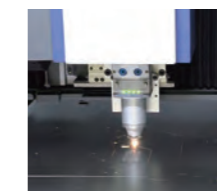
Logistics Systems / Factory Automation Systems
-Automated Storage & Retrieval Systems (AS/RS)
-Sorting System



Automated Material Handling Systems for Clean Rooms
-AMHS for Semiconductor Fab.
-MCS (Material Control Systems)



Machine Tools
-Twin Spindle CNC Chucker
-In-Line Opposed Twin Spindle CNC Turning Machine



Sheet Metal Machinery
-Laser Punch Press
-Press Brake
-Fiber Laser Cutting Machine



Communication Equipment
-MFP (Multifunctional Peripheral)
-Facsimile

Karuta

纸牌



"Hyakunin Isshu" is a collection of "waka" (short verse divided into a 5, 7, 5, 7, 7 syllable-per-line structure), compiled in the first half of the 13th century. It was read by 100 poets over a period of about 550 years from the Asuka period (6th~7th century) to the early-modern period in Japan.

It is commonly known as "Karuta", which was created based on this waka collection. Karuta is a traditional Japanese card game that consists of a set of "yomifuda" and "torifuda". One person reads top phrase of waka on yomifuda aloud, and the others compete to take torifuda, in which bottom phrase is written, on a table or floor.

The person who takes torifuda the most is the winner.

Among karuta, Hyakunin Isshu is very famous for the game with family and friends, and is used as an opportunity to study

classics at school. In addition, there are national championship tournaments called "Kyogi Karuta" for both men and women divisions.

Hyakunin Isshu karuta consists of 200 cards, 100 each for yomifuda and torifuda. On yomifuda, a waka is beautifully and colorfully illustrated with the author's name and portrait. On torifuda, the bottom part of waka is written in Hiragana, Japanese characters. Hyakunin Isshu poems express the author's feelings about the seasons, the beauty of nature, and love in beautiful words.

So players can experience the beautiful sounds of Japanese, study classical literature, and learn about the rich scenes of Japan that were composed in the poems even today in the 21 century.

《百人一首》编纂于13世纪上半叶，收录了从日本的飞鸟时代(6~7世纪)到近代约550年间，总计100位诗人的和歌总集(短韵文分为5、7、5、7、7音节结构)。通常大家更为熟知的是以这部和歌集为原型创作的“纸牌”。

纸牌是日本传统的纸牌游戏，读用牌和取用牌是成套使用的。1个人大声朗读读用牌，其他人互相比赛去拿摆在桌子和地板上的取用牌。拿到最多牌的人即是胜者。纸牌中，百人一首作为与家人和朋友一起玩的的游戏非常有名，也被用作在学校学习古典文学的游

戏。另外作为“竞技纸牌”，也有争夺男女个人日本第一的大赛等。

百人一首纸牌由读用牌和取用牌各100张，共计200张纸牌组成。读用牌上，和歌一首和作者的名字和肖像一起出现，画着美丽且色彩鲜艳的画。而取用牌上和歌的下句是用平假名写的。百人一首中的和歌，将作者对季节和自然美、恋爱等的想法用美丽的语言，富有情趣地表现出来。玩家们可以触摸到日语的优美旋律，学习古典文学，即使是在21世纪的今天也有机会感受到和歌中咏唱的丰富的日本情景。