

# Tojiro

## **High-Class Kitchen Knife Manufacturer of Tsubame-Sanjo Human Resource Management for Tradition Inheritance and Innovation**

Tojiro Co., Ltd. (Tojiro) is a manufacturer of high-class kitchen knife located in Tsubame City, the heart of Japanese knife manufacturing. The company was reviewing what is the best way to pass the company's technology to the next generation through their human resource management.

### **History of Tsubame Region**

Tsubame is a town located in the middle of Niigata Prefecture and is one of Japan's leading rice-growing areas. Together with the neighbor town of Sanjo, the area is also called as Tsubame-Sanjo. Originally, Tsubame was a town of craftsmen, and Sanjo was a town of merchants, but both of them shared the identity of manufacturing metal products.

In both regions, manufacturing started early, from the Edo period, and the production of Japanese nails, which were made by hammering iron, began. The area started manufacturing nails to provide nails for houses in Edo because mineral resources were obtained in nearby Mt. Yahiko and charcoal for fire and the technology of the Aizu Domain were available locally.

Tsubame started manufacturing based on metal processing technology slightly after Sanjo and developed copper forging, capitalizing on the copper mine at the foot of nearby Mt. Yahiko. UP to this date, Gyokusendo Co., Ltd. of Tsubame continues to manufacture copper products based on this technology.

### **History of Tojiro**

The origin of Tojiro goes back to the establishment of Fujitora Agricultural Equipment, a manufacturing company of agricultural equipment parts and agricultural cutlery in 1953. Since agriculture was popular in this area at the time, the company started as an agricultural equipment manufacturing company as a business derived from agriculture. The sales of agricultural equipment tended to slow down in winter times. To supplement the lower sales,

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they started manufacturing knives, for which demand was rising at the time, from 1955. They followed with capital increase, expansion of factory and increased the size of business. In 1980, Tojiro's DP Metal-cap Kitchen Knife series was awarded the MITI Good Design Award, and the long production history of the acclaimed western style kitchen Knife series had begun. Next year, the DP Metal-cap Kitchen Knife series was awarded the MITI Good Design Award again. Then, they built a new quenching factory and expanded their polishing factory. In 1996, the series was awarded MITI Good Design Long Life Design.

In 2000, Tojiro PRO Japanese Kitchen Knife series won the 2000 Good Design Award. This knife was an innovative combination of a Japanese knife blade and a stainless-steel handle. It got outstanding hygiene and durability, something that previous wooden-handled Japanese knives did not have.

In 2001, the company sponsored a contest organized by French Food Culture Center. From 2004, the company started to participate Ambiente at Frankfurt Messe and the Tojiro brand started to get international recognition.

In 2012, Tojiro Origami Series, which were kitchen knives with shapes not previously possible won the 2012 IF Design Award of Germany. The knives featured complex bending of single sheet steel to realize intended design. They were made possible by Tsubame-Sanjo's technology to bend stainless steel in highly precise way.

In 2015, the company changed its name from Fujitora Industry Co., Ltd. to Tojiro Co., Ltd. in line with the increased recognition of Tojiro brand to refresh the brand image.

In 2015, the company also opened Tojiro Knife Gallery, an in-house store that keeps more than 900 kinds of company products. The store has a kitchen studio on the second floor to hold cooking classes periodically and enhance the connection between their products and the food culture.

In 2017, the company opened one of the large factory/tour facility of Tojiro Knife Factory and Tojiro Knife Atelier. The two facilities were combined with Tojiro Knife gallery as Tojiro Open Factory with the mission to optimize the promotional activities towards users. The Tojiro Open Factory won the Good Design Award in 2018.

In 2017, the company also established its liaison office in Germany to accelerate its overseas

activities.

### **Tsubame, the Town of Knife**

The town of Tsubame is located in the vast Niigata Prefecture, which includes the Echigo Plain and the Shinano River, and is one of Japan's leading rice-producing regions.

However, due to its topography, which is blessed with water for rice cultivation, it suffered from numerous floods. The area was surrounded by the Shinano River, which had the largest annual flow of water in Japan, and its tributary, the Nakano River, which caused frequent floods and hindered agricultural development. In the early Edo period, Japanese nail craftsmen were invited from other regions, and the metal industry flourished as a side job for farmers.

The lower reaches of the Shinano River were flooded more than 60 times on record from 1680 to the Meiji Restoration in 1868, and agricultural production was severely damaged each time. In addition, due to the heavy snowfall in this area during the winter, crops were not produced, and farmers needed to earn a living in other way than farming in order to maintain their livelihoods.

<https://www.tsubamesanjo.jp/kanko/about/>

<https://www.hrr.mlit.go.jp/shinano/ohkouzu/bousaic/100108rekishi/100108rekishi2.htm>

During the Edo period, the Shogunate encouraged the production of Japanese nails for buildings in the fast-growing Edo town (present-day Tokyo) and invited craftsmen of Japanese nails from other regions to start the metal industry as a side job for farmers. In this way, the production of nails began in the Tsubame region as a side job for farmers during the winter and to secure income in preparation for flood damage.

There is a copper mine at the foot of Mt. Yahiko near Tsubame, and there are also several mines in Aga Town near Tsubame. Nearby mountains also had wood and minerals that can be used as fuel resources. The Shinano River and other rivers facilitated the logistics, and the temperament of the residents who could withstand the cold winters also made Tsubame an ideal place to develop "Blacksmithing" as an industry. "Blacksmithing" is a technology that heats and hammers iron to increase its strength so that it can be used as critical parts of industrial products. In Tsubame, blacksmithing to hammer copper into shapes was the mainstream, and ordinary "blacksmithing" was more common in Sanjo. In ancient times,

Japanese swords were made by blacksmithing and this method is still used in present day for metal processing products that requires strength and durability such as auto parts and construction material.

### **Sales Channel of Tojiro**

Up until recently, Tojiro was selling most of its products on an OEM basis, and until around 2000, it sold its products through wholesalers rather than directly. At the same time, there were disruptions such as the prices of products sold through the Internet being lower than the prices that wholesalers paid to manufacturers. Tojiro was selling its products at the recommended selling price for wholesalers to protect them and therefore it was difficult for them to sell through the Internet. They were also concerned that selling their products through the Internet at lower price would hurt the Tojiro brand.

### **Production processes and technology of Japanese kitchen knife**

There are two types of knife manufacturing processes: hammered knives, which are a traditional method that involves heating soft iron or steel and hammering them into shapes, and punched knives, which are more suitable for mass production and involve punching out shapes from molds.

Matsumura, a 20-year employee at Tojiro, was in charge of the highest-class Japanese kitchen knives working at Knife Atelier, the factory serving the purpose of factory tour and sales outlet that Tojiro started in 2017. He studied forging at Nagaoka Institute of Design and later was in charge of “uchihamono,” knives that are made purely by hammering irons into designated shape without using dies. Matsumura is now in charge of hand-made custom knives and outdoor knives. His works are in display in Tojiro’s Knife Gallery.

In Tojiro, they had the process to change the shape through forging until about 20 years ago. As old workers retired, however, those old workers with the skill of forging became rare. There were not workers who will teach the skill to younger workers either and it became difficult to manufacture knives through forging.

Therefore, Tojiro decided to send Matsumura out to learn the skill 20 years ago. City of Sanjo was next to Tsubame city and there were many companies with forging technology, one of which was managed by Tojiro’s friend. Back then, there was this informal

connection among manufacturing companies, and they even accepted young apprentices from out of the prefecture.

Compared to Sanjo, Tsubame was good at mass production. Conversely, Sajo was good at hand-made production. Tojiro sent Matsumura to Sanjo to make him learn the forging technology of Sanjo companies. Matsumura spent one year in Sanjo to acquire the technology, brought it back to Tojiro and started to join the process of manufacturing Tojiro's highest-quality Japanese kitchen knives.

### **Employee independence**

In the past 10 years, some of the new employees started to express their eventual goal to become independent. Some of them worked to set up his own knife company and others acquired know-how of design and became independent. There are people who were in charge of finishing process and became independent as a subcontractor of the process for Tojiro.

The president of Tojiro conducts interviews with all employees every July and asks workers whether they want to go independent. The president actually welcomes such employees, and the company is a great place to those who wants to acquire skill and start his own business. In addition to entrepreneur types, there are many employees who want to learn skills to become professional knife craftsmen and grow together with the company.

### **Human resource development system in Tojiro**

The development of regular employees is done by managers of each section who observe the activities of employees to evaluate the skill level and assigning them to appropriate current and future work and workplace. Previously, all employees were evaluated by the president, but now managers only share the standard to evaluate skills with the president and the actual evaluation is done by managers.

Employees aiming to become independent were asked to plan the process of acquiring skills by themselves so that they could run their own businesses in the future.

Tojiro did not only produce high-end products that require advanced technology to manufacture, but also products for ordinary buyers. Employees could first acquire metal

processing technology for ordinary buyers, and based on that, challenge to acquire higher-level technology. The employees were encouraged to develop their own skills on a daily basis.

The company expected that, by improving the skill for work every day, workers will understand that they will have more choice as to the future jobs. Setting up of one's own company was not a goal. The company merely wanted workers to understand that if they get higher skill, they could even leave the company. They wanted workers to think what they should do now to realize the future they aspired.

This type of skill is not something that can be learned by everybody. One has to possess certain sense. One has to think by himself, come up with his own approach against obstacles, and brush up his skill and expand the choices for future career. Tojiro tried to identify employees who understand this logic and was ready to provide chances to them. In line with recent trend to improve work conditions, number of days off was increased, workplace environment was changed to entice younger employees and career development opportunity was provided to those with strong will to improve.

Tojiro was trying various ways to develop employee capability. Until 2 years ago or 2021, they had Meister system under which senior employees taught younger employees. However, this system could not last because senior employees had to allocate too much time for teaching and could not allocate enough time for production. As the result, they started to produce video that show how certain process should be done. Now, they are using those videos to teach younger employees with OJT (on-the-job-training) method.

To apply OJT in various processes, video of all types of work were produced. Younger workers can now see the video of whichever process they have to perform. The use of video was the first step to improve the quality of training and contributed to visualization of technology and work process.

Tojiro used to hire 6-10 people each year as new employees, many from local high schools. The company assesses each employee's personality and abilities and assigns them to work processes that match them. The key to developing employees' abilities is identifying their individual skills and assigning them to tasks that match their skills.

The company also hired mid-career employees, but in those cases, they mainly hired people

with experience. There was also a factory in Tsubame that was doing the same work as Tojiro, so recruiting people from other companies was relatively easy. The mid-career employees were encouraged to acquire additional skill such as qualifications for slinging (crane operation), so that they could take up diverse types of work in the future.

Among the core tasks in knife production, there are not many that require certifications. In other words, there are few clearly stated requirements. Unless there is a person capable of judging the skill level of employees in each process, the level of proficiency of employees could not be accurately measured, and the allocation of people for that process could not be properly adjusted. It is important to develop people who have an eye for technology, but recently, with the retirement of older workers, development of employees who can judge workers' level of proficiency is now an urgent issue.

### **Open Factory**

Tojiro launched Open Factory in 2017. It was a facility that showed the inside of factory where they were manufacturing knives and showing to visitors so that visitors would get interested in the manufacturing process, increase affection to the products, and make them supporters of the brand. In actuality, Open Factory also brought about some benefit that was not unexpected by the company. The new facility stimulated the employees. Matsumura, the company employee of 20 years, acquired skill in Sanjo and was in charge of high-end products, did not want to show his work to visitors and said that he did not want get interviews from outside initially. When the Open Factory opened its doors, however, he started to enjoy the conversation with visitors and people who purchased Tojiro's products. He started to change.

He was a typical craftsman that immersed himself to work, but he started to notice that he is being watched and felt that he wanted his proud to be seen by many people. Because the workplace was watched by visitors, the employees started tidying up the factory. They also started to greet visitors more often and this resulted in proposals that reflect customers' point of view. Other employees, too, started to get involved and proposed to organize the Committee to Greet Visitors, the Committee of 5S, the base of factories, and the Committee of SDGs.

“5 S” stands for:

Seiri (Sorting in English)

Seiton (Setting in order in English)

Seiso (Shining in English)

Seiketsu (Standardizing in English)

Shitsuke (Sustaining the discipline in English)

Open Factory showed the inside of Tojiro's factory to outside people. As the result, enough number of people started applying for the job when Tojiro needed new recruits. Tojiro's name alone was now good to bring new people to the company.

It could have been because they did not just show mass production processes but also handmade process and the process of polishing products by hand, for example. It was not a monotonous manufacturing but a workplace with processes that can apply and improve different skills of different workers. People applied for jobs in Tojiro because this point was communicated to applicants.

### **Retention of quality and product line-up**

Since the order for high-end kitchen knives is limited, most of the processes are carried out in-house. Depending on the process and order volume, some work may be outsourced, but in most cases, outsourcing of the manufacturing process is assigned to individual experts outside Tojiro. Tojiro did not intend to manufacture everything in-house, but to incorporate and a system to manage risks such as the difficulty of process control when outsourcing, the inability to confirm delivery dates, and how to check the quality of work-in-progress within in-house manufacturing process.

Outsourcing had to be asked to experts that had certain level of skill, who were limited in number, and sometimes there was competition for their services against the competitors of Tojiro. Therefore, while the company intended to continue the outsourcing, it was also starting to develop capability to handle the difficult tasks in-house in case of emergency.

In order to pass on the advanced techniques used to produce high-end products, it was important to secure young people who could inherit the traditional techniques. Through the factory tour at Tojiro's Open Factory, visitors from local elementary schools, junior high schools, and high schools came to understand the knife making process. It was a great promotional tool that made the children think of knife making as one of possible jobs in the future.

Japanese knife manufacturers are attracting attention from overseas for their high quality

and fine-tuned varieties that meet the needs of users, and in some cases, foreigners are working at other knife factories.

Until about 25 years ago, there were few Chinese companies that could produce knives that met the quality standard required in Japanese market. It was because Japanese manufacturers wanted to increase the manufacturing capacity in China where cost was lower and dispatched their own skilled craftsmen to China, provided technical guidance, and passed on their know-how.

However, after that, general merchandise stores (GMS) started ordering products made in China not from the Chinese factories of the Japanese manufacturers but directly from above type of Chinese factories to save intermediate cost. There was a time when it led to the decline of Japanese knife manufacturers. For the knife industry, the technical guidance to the local market was not a total failure because it resulted in expansion of the local market. However, the resulting flow of products led to the hollowing out of Japan's domestic production industry and that was an issue.

Knives made in China were mainly made of stainless steel, and the welding to connect the stainless-steel parts was difficult. Japanese manufacturers had maintained an advantage by turning this technology into a black box, but when producing in China, they passed on this previously unreleased technology.

In China, the technology level has reached the point where they can make high-end knives, but they have not reached the level where they can provide products with stable quality. Even if a knife is mass-produced, there is always some manual work involved, so if the manual work is not properly managed, there will be wide variations in quality. About 20 years ago, Japanese-made knives were selling large number of knives in the field such as perforated knives and knives treated with fluorine on both sides, but these have now been replaced by Chinese-made knives.

The “Damascus knife” is made by layering different steel materials, using hard steel with a sharp edge in the center of the blade, and layers of soft steel on both sides to achieve the best appearance and sharpness. This knife is a unique Japanese product of which sales are increasing. However, they do not yet have any new product with technology that can appeal to users aside of Damascus knife.

The challenge for the Japanese kitchen knife industry is to produce high-quality products using traditional techniques that were not mass-produced, and to produce products that could appeal to the public. Unless they continue building up a high-end lineup of high quality and commensurate prices that is difficult to be made in China, they would not be able to survive the competition with products made outside of Japan.

Developing a new line of high-quality products based on traditional knife-making techniques means helping young people find new goals for the future. It also helps current craftsmen have the pleasure of teaching young people who are working towards those goals. All these will lead to the development of the entire industry.

The leaders of Tojiro Knife Atelier are teaching six young people. About two people join the company every year and are taught techniques related to on-site work so that they can acquire the skills necessary to make knives. Matsumura, who is in charge of high-end products, has been able to instruct young people more effectively than before and has achieved better results. He was teaching the process of manufacturing he was in charge of in Open Factory and the skill behind the process to visitors. He was practicing the conversion of skill into verbal expressions, which was useful in educating young people. It took more than 10 years for new employee to join Tojiro and then become capable to perform the entire processes by himself. Matsumura thought hard to figure out the way to explain his skill to manufacture knives in plain words. In the end, he figured it out through his experience of explaining it to factory visitors and that in turn helped him when he had to educate young employees.

Tojiro actually wanted all workers to work hard in the company until retirement, but people who aim to become independent were ambitious and had energy, so they wanted to work towards their future dreams and seize opportunities. After becoming independent, some ex-employees maintained a relationship with Tojiro and sometimes took up Tojiro's subcontract work, which helped them maintain their independence stably.

Tojiro is now at the point to rethink how to preserve techniques dating back to the Edo period, the manufacturing technology based on tradition, and merge them with new technology and business fields. They have to explore how to develop human resources which will come mostly from the local area.



Craftsman, Mr. Matsumura



Western Style Knives



Japanese Style Knives



Chinese Knives

Tojiro Knife Line up

*JICA-IUJ case material series*



TOJIRO SHIROGAMI HAMMERED Usuba 195mm



TOJIRO SHIROGAMI HAMMERED Deba 180mm



TOJIRO BASIC DAMASCUS Petty Knife 135mm



TOJIRO PRO Service en Salle Steak Knife 190mm



TOJIRO SHIROGAMI Tako-Sashimi 330mm

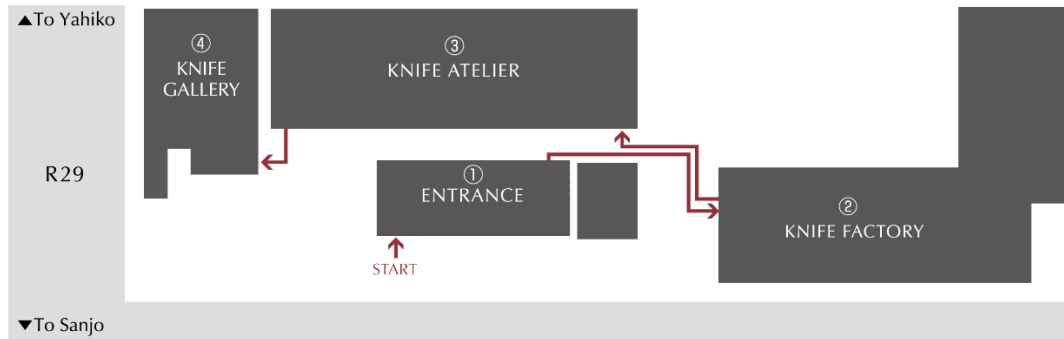


TOJIRO PRO Paring Knife 90mm

High-end Knife series

## JICA-IUJ case material series

Red arrow indicates visitor's route.  
Click the area you would like to see for its brief introduction.



### Tojiro Open Factory – Map



Entrance

*JICA-IUJ case material series*



Knife Factory



Knife Atelier



Knife Gallery Showroom

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