



Kobelco Steel Tube Co., Ltd: High quality seamless tubes for the global market

Based in Tokyo, Japan, Kobelco Steel Tube Co., Ltd. manufactures seamless stainless steel tubes and pipes in a variety of alloys. Part of the Kobe Steel Group of companies, the company is internationally renowned for providing high-quality products that are heavily depended upon in severe-service environments throughout the chemical & petrochemical, nuclear power, automotive, aerospace and semiconductor industries. Over the last year the company has undergone several significant changes in order to better serve its worldwide customers. Last April, on the company's 20th anniversary, it officially changed its name from Kobe Special Tube Co., Ltd. to Kobelco Steel Tube Co. Ltd. *Stainless Steel World* had the pleasure of speaking with Kobelco Steel Tube's President, Mr. Keiichi Wada, and Director and Sales General Manager, Mr. Yasutsugu Hayama, about the company's latest developments and why clients should choose Kobelco Steel Tube for all their tubing and piping needs.

By Joanne McIntyre

“We aim to be a department store. Neither a specialist nor a supermarket”

- Mr. Wada



“Simply put, we’re aim to be like a department store where you can find everything you need. We’re not a specialist with a small range of products, nor a supermarket selling discount goods,” explains Mr. Wada.

Expanding global presence

“Over the past few years, we have increased the number of our export sales staff every year to focus on overseas sales, and we have also worked hard to rebuild and expand our sales organization,” explains Mr. Hayama. “It’s easy to determine our customers’ needs by talking to them directly, and building trust relationships as the result of intense communication. Furthermore, we are trading with most major wholesalers in Japan and dealing with global trading companies, we can easily and accurately understand the market.”

Kobelco Steel Tube has three locations throughout Japan, while trading companies all over the world also stock and distribute KST products, ready to quickly respond to clients within the same time zone. KSTs’ goal for 2017 and beyond is to work with more trading companies to better focus on expanding export sales and the company’s presence within the oil and gas, instrumentation tube and automotive sectors.

“Outside of Japan, Asia and North America have become our main markets, followed by Europe. We are now planning to expand our business in the Middle

East and in Europe, while maintaining our global network,” Mr. Hayama continues. “Our main export products are general stainless steel tube and piping (GTP) and heat exchanger tubing; plus we have a very successful presence in the global semiconductor, instrumentation and automotive sectors.”

The company is planning to expand its range of small diameter instrumentation tubes in anticipation of increased activity in the oil & gas industry explained Mr. Hayama. “For many years we have been the worlds’ leading supplier for small tubes for semiconductors and our market share in the automotive industry has also expanded. The oil & gas industry requires various types of high-quality, small diameter seamless tube which are also made to strict quality requirements, so this fits very well with our current activities. We will focus on producing tubes with a diameter of 6 - 25 mm specifically for this sector, and are busy gaining approvals with the oil and gas majors.”

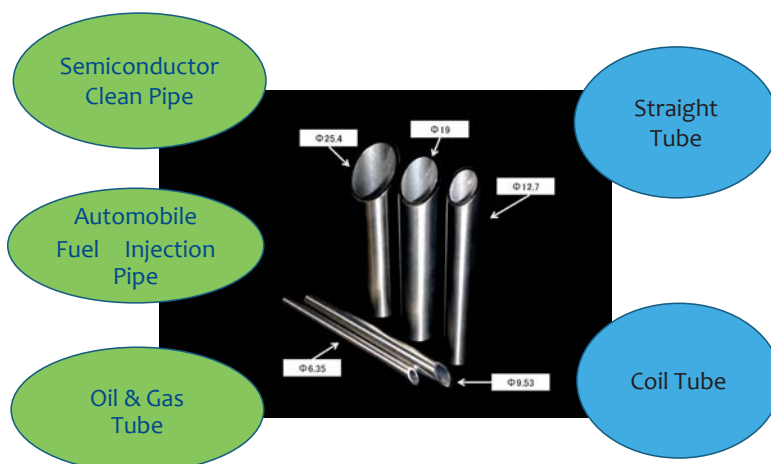
Closer to home, the 2020 Olympics are revitalizing business around Tokyo, particularly for infrastructure project. “We are taking advantage of the increasing in domestic demand while expanding our sales for general piping both at home at abroad,” explained Mr. Wada.

Achieving operational excellence

The policy of KST’s management is to maintain its production share in the seamless stainless steel tube market. Efficiency is a key focus and

Mr. Wada explained that the parent company of Kobelco Steel Tube (KST), the Kobe Steel Group, had earned a positive reputation for being the very first seamless steel pipe manufacturer in Japan that used the Ugine-Sejournet extrusion process since 1959. The steel tube division of Kobe Steel was spun off into its own business segment called Kobe Special Tube Co., Ltd. in 1996 and last April, on the company’s 20th anniversary, it changed its name to Kobelco Steel Tube Co., Ltd. At the same time, the Tokyo office became the head office under a dual head office system, along with the Shimonoseki head office and works.

Instrumentation Tube



the company achieves continuous improvements in labour productivity of 5% per year. The company constantly increases its product range to ensure it remains a comprehensive product range. Recently this has included the expansion of production capacity of instrumentation tubes, and improvement of its large-diameter tube manufacturing technology. Paired with these ambitions is its commitment to thorough quality control, ensuring a safe workplace for its employees, and compliance with all regulations.

Mr. Wada explains the specific strategy for achieving KST's medium to long term goals.

"Operational excellence is achieved by '3T; TPS (Toyota Production System), TPM (Total Preventive Maintenance) and TQM (Total Quality Management)."

"Ten years ago we introduced the Toyota Production System (TPS) which provides a robust management framework. TPM ensure we have stable operation of our equipment. Finally TQM is a human resource strategy that effectively utilizes TPS and TPM."

In 1989 KST was awarded the Deming Prize, the oldest and most widely recognized quality award in the world which recognizes businesses that have successfully implemented TQM. "In 2015 we reintroduced TQM to achieve further improvements," Mr. Wada explains.

Ongoing investments

To achieve its goal of expanding global sales Kobelco Steel Tube has made several capital investments. These include installing coil tube manufacturing technology at Shimonoseki Works and investing in the cutting-edge technology to produce both thick and thin-walled pipe (specifically 8" and up).

Customer oriented R&D

Kobelco Steel Tube has a dedicated research and development division which focuses on developing products to meet customers' current and future demands. Mr. Wada: "Most of our research looks at developing new grades of steels. Product development is focused on operational improvements, for instance creating new sizes or unusual shapes. We are constantly renewing our research objectives to match the needs of the market and thereby engaging in the development of new steel types. We have developed dedicated teams in research and in operations, with the aim of producing what the customer truly wants."

The Kobelco range of grades available.

	JIS	ASTM	Cr	Ni	Mo	Cu	W	N
Austenitic	SUS304	TP304	18	8	-	-	-	-
	SUS316L	TP316L	18	12	2	-	-	-
	SUS312L	S31254	20	18	6	-	-	0.2
Duplex	—	S32304	22	4.5	0.3	0.3	-	0.3
	SUS329J3L	S31803 S32205	22	5	3	0.3	-	0.2
	SUS329J4L	-	25	6	3	0.3	-	0.2
	—	S31260	25	6	3	0.3	0.2	0.3
	—	S32750	25	7	4	0.3	-	0.3
	—	S32760	25	7	4	0.3	0.6	0.3

"In addition to the tube with 8 inch, we are planning to supply 10 and 12 inch based on our original technologies in the future," explains Mr. Wada. "The number of Bright Annealing (BA) furnaces was also increased for instrumentation tube expansion. All of these investments have helped to widen and strengthen the quality of KST's product offerings."

"Coil tube" & "large-diameter thin walled tube" technology

KST is actively expanding its coil tube and large-diameter thin walled tube making activities, utilizing knowledge and expertise gained in the past.

Mr. Hayama explains; "We have all the technology required to make them in-house and are planning to increase production from this autumn. For making large-diameter thin walled tubes, we utilize our 2,000 ton press to extrude and our own cold drawing technology. The same is true for our small diameter tubes; these are made with a small press then they are drawn quickly, resulting in overwhelmingly better quality."

High-quality tubes & pipes

Kobelco Steel Tube is very aware of ensuring the quality of all its products, especially as many of its tubes and pipes are used in highly corrosive and severe service end-use applications. Mr. Wada: "There is absolutely no room for failure in these applications, which is precisely why having the certification not only ISO9001, ISO14001, Bureau Veritas (BV), DNVGL, but also Norsok M-650 and ADCO certification is critical."

The company is proud of its most recent certification, the Norsok M-650 Edition 4: *Qualification manufacturers of special*

The three pillars of KST's business operations:

1. Constantly striving for the highest standards of operational excellence so customers can rely on KST to offer technology, products and services of consistently high quality.
2. Holding its employees in high esteem and creating a corporate culture in which the team is strengthened by drawing out the best in each individual.
3. Working hard to create new products of value as a result of steady change and pursuing growth within an environment of stability.

materials and the Abu Dhabi Company for Onshore Oil Operation (ADCO) certification. After achieving these certifications last year, the company has increased its market share by targeting specific industries such as offshore and chemical that require both duplex and austenitic stainless steel tube and pipe. Mr. Hayama explained that the very next day after achieving these certifications, KST started offering these specifically certified duplex products after receiving many inquiries from customers who required these top-quality tubes for critical and time sensitive projects.

Technical superiority

Mr. Wada outlined some of the company's key technical strengths. "We are a manufacturer producing consistently from raw material (round bar billet), and not a drawing tube manufacture; this makes us very cost competitive. In addition, we can handle everything from general purpose material to high end material



Clean pipe for semiconductors (BA tube).

such as duplex, high-nickel, etc. because due to our original production control system, we have a stable supply of round bar billets from Kobe Steel, Ltd. and other leading manufacturers, as well as an abundant stock of round bar billets.” “Our particular strength is in cold processing goods with good quality and cold-drawing finish, and we can arrange a short time production time. In fact, our cold processing is based on our original technology, with which we can supply high quality small diameter bright annealed tubes. We have a 2000 ton press which can extrude a range of small diameter tubes.”

He continues: “The high degree of in-house expertise, built up over years of producing tubes for demanding semiconductor applications, mean that our products are all made to a very high quality. This also means we are able to produce tubes very quickly, for instance for prototype projects.”



High pressure piping for a hydrogen station.

Small diameter tubing experts

KST’s high level of skill in producing small diameter tubes dates back to its history of producing precision tubes and instrumentation for the demanding nuclear power industry.

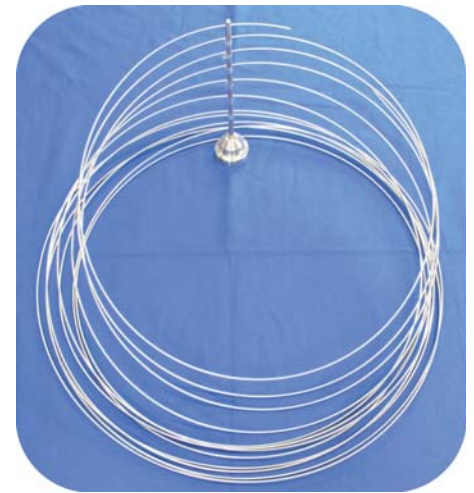
The company provided stainless steel clad tubes for the high speed nuclear reactors. This technology is currently applied to a number of different applications, such as instrumentation tubes for petrochemical, gas piping for semiconductor plants (clean pipes), automobile-related parts and medical instrumentation. In recent years, KST has also provided very thick high-pressure pipes (cold-worked) for use in hydrogen gas stations and other facilities.

KST’s precision tubes acquire a high level of smooth inner and outer surfacing and cleanliness by repeated special cold working and bright annealing. It can also handle requests for cold finished and outer surface polishing.

“KST was actually the first company to venture into the semi-conductor market,” explains Mr. Wada. “Today we are one of the biggest producers of semiconductor tubing in the world, and certainly the biggest in Japan. The automotive market is also an important market for these products. Today we are turning to the oil and gas market to increase our diversity. If we see a potential market we can invest in equipment quickly and set up a system to increase production because we have the in-house expertise. Demand will increase as the crude oil price increases, and increased certification will see KST further expand into the Middle East.”

Duplex stainless steel tube and pipe

Duplex stainless steel tubes and pipes have attractive characteristics that combine the corrosion resistance of austenitic stainless steel with the outstanding strength of ferritic stainless. These tubes and pipes also allow for a high level of strengthening, while enhancing corrosion resistance with a compound of ingredients such as chromium, molybdenum and nitrogen. The tubes and pipes can be used in place of pipes for petroleum and chemical plants and tubes for heat exchangers, which must be resistant to stress corrosion cracking under harsh conditions, and can also take the place of austenitic stainless steel to help weight reduction.



Coil tube (OD 1/4”).

These products are all produced out of the Shimonoseki Works facility using the highest quality materials and adhering to the strictest requirements such as those for the nuclear and aerospace industries. Quality assurance methods include non-destructive testing such as eddy current and ultrasonic testing as well as other methods evaluating the tensile and hardness of the item. This adherence to quality is one of the reasons that Kobelco Steel Tube is one of the leading seamless steel tube manufactures in Japan. Customers worldwide know they can trust the quality of KST’s tubes and pipes and also expect them to be delivered anywhere they are needed, exactly when they are needed. When asked why customers should choose Kobelco Steel Tube products instead of another company offering similar products, Mr. Hayama was quick to respond, “Most of our materials are manufactured by our parent company, Kobe Steel, LTD., so the quality is extremely reliable. We also have advanced processing technology and our own production control technology, supported by quality customer service and quick delivery times.”

Facts & Figures

Name:	Kobelco Steel Tube Co., Ltd.
Established:	February 1959 (as a factory of Kobe Steel, Ltd.), Independence April 1996 (as Kobe Special Tube Co., Ltd.)
Equity capital:	JPY 4,250,000,000
Employees:	372 (as of April 2017)
Shareholder:	Kobe Steel, Ltd. (100%)
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