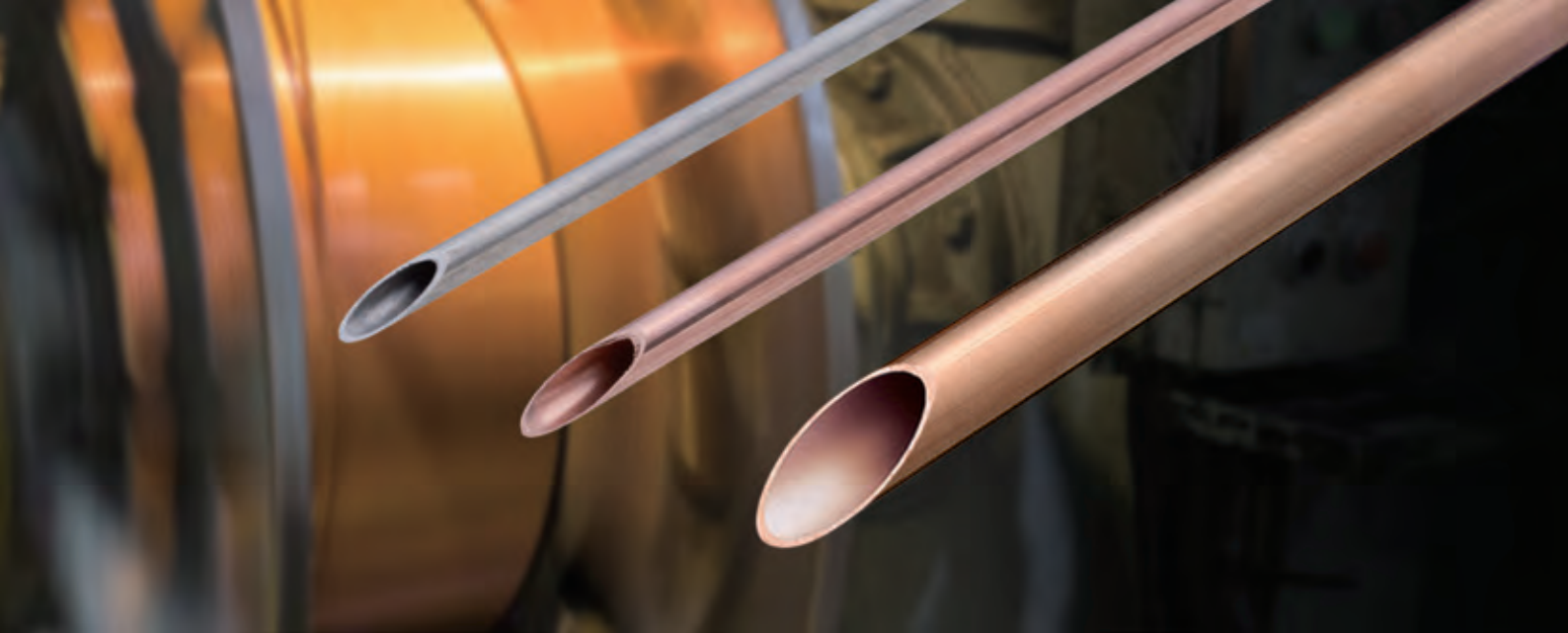


C O R P O R A T E P R O F I L E



NJT

NJT Copper Tube Corporation

New Challenge with Leveraging Abundant Experience

Atomic number 29, atomic weight 63.546. Copper is said to be the metal that human beings met the earliest, and due to its excellent characteristics, it has long been in close relationships with our lives. Today, it is a classic yet cutting-edge metal that involved in the most advanced technical fields, including space development and information systems. From our founding to today, and in the future, we will continue to look at the "flow" and create various metal products such as heat exchangers and Inner Grooved Aluminum Tube along with the "flow" of the times.



We contribute to the improvement of the global environment as a foundation for the comfortable social life.

CEO Message

We have been consistently manufacturing copper tubes since the establishment of the "Sumitomo Copper Rolling Works" in 1897. Leveraging the technology cultivated through our extensive experience and research and development in copper tube production, we have always been at the forefront of three business fields: refrigeration and air conditioning, water supply systems, and energy. By delivering products and services that accurately address new emerging needs, we have contributed to the development of infrastructure in Japan and also across the world.

The business environment surrounding us is becoming increasingly uncertain due to factors such as the progression of global warming, the attempts to tackle environmental issues through low-carbon and decarbonization initiatives, the initiatives of a sustainable society, and the rapid changes in the global society. Even amid these challenging times, we strive to maintain and develop a solid business foundation by further enhancing quality and technological capabilities and realizing new growth strategies. Under our management philosophy, we remain committed to contributing to society and our stakeholders while pursuing the happiness of our employees.



Ishiguro Norimitsu
CEO

Philosophy

We provide optimal products and services with excellent technical and product capabilities to meet the customer's challenge of pursuing high functionality of heat exchange products. In this way, we pursue the happiness of our employees and contribute to the improvement of the global environment as a foundation for the comfortable social life.

NJT Code of Conduct

Gratitude and Trust : Build trust with society by always being grateful and honestly for every stakeholder.

Improvement and Effort : Do not hesitate to keep steady efforts, and accumulate improvements to progress.

Ingenuity and Transformation : In order to adapt quickly to the ever-changing external environment, take on innovative challenges without hesitation.

Execute Boldly : With brave, carry out innovation boldly and archive results.

We have a history of over 100 years

2020

- 1897** Sumitomo Head Office purchased Japan Copper Manufacturing Co., Ltd. and established Sumitomo Copper Plant in Ajikawa, Osaka.
- 1913** Sumitomo General Head Office changed the name to Sumitomo Copper Works.
- 1921** Sumitomo General Head Office was reorganized as Sumitomo Goshi Kaisha and Sumitomo Copper Works became Sumitomo Goshi Kaisha Copper Works.
- 1926** Sumitomo Steel Tube & Copper Works, Ltd. was established as a spin-off from Sumitomo Goshi Kaisha and inherited the business rights for Copper Works.



A view of Sumitomo Shindojo Ajigawa Plant in the 1910s.
*Photo provision: Sumitomo Historical Museum

- 1930**
- 1935** After Sumitomo Steel Tube & Copper Works, Ltd. merged with Sumitomo Steel Works, Ltd., became Sumitomo Metal Industries, Ltd.
- 1941** Established Nagoya Light Alloy Works (Minato-ku, Nagoya).
- 1947** Nagoya Light Alloy Works renamed as Copper Works. Ceremony held to commemorate the 50th anniversary of the company's copper business.
- 1952** The trade name returned Sumitomo Metal Industries.
- 1959** Sumitomo Light Metal Industries, Ltd. was established by separating the Aluminium Products and Copper Products Divisions from Sumitomo Metal Industries, Ltd.

- 1960**
- 1969** Sumikei Copper Industries, Ltd. was established at its present location, City of Toyokawa.
- 1975** Established the Technical Research Laboratories.

- 1980**
- 1985** Sumikei Light Metal Industries, Ltd. merged with Sumikei Copper Industries, Ltd. The former Sumikei Copper Industries, Ltd., became its "Copper Works"
- 1990** Sumikei (Malaysia) Sdn. Bhd. was established (Present NJT SOLUTIONS (MALAYSIA) SDN. BHD.).
- 1996** Copper Works awarded a First Category of TPM Excellence Award by the Japan Institute of Plant Maintenance (JIPM). The Technical Research Laboratories renamed the Research and Development Center.
- 1997** Sumikei Guangzhou Metal Products Co., Ltd. established in Guangdong, China.

- 2000**
- 2006** Sumikei Copper Tube Sales Co., Ltd. Established
- 2011** Sumikei Copper Tube Co., Ltd. was established as a spin-off from Sumitomo Light Metal Industries, Ltd.
- 2012** With the withdrawal of Hitachi Cable, Ltd., purchased and transferred the equipments and technologies
- 2013** Following the merger of Sumitomo Light Metal Industries, Ltd., and Furukawa-Sky Aluminum Corporation to establish UACJ corporation, the company name was changed to UACJ Copper Tube Corporation.
- 2019** Gained financial independence from the UACJ Group, and its name changed to NJT Copper Tube Corporation.

- 2021** The company absorbed its domestic consolidated subsidiaries; NJT Copper Tube Sales Corporation, Toyo Fitting Co., Ltd., NJT Copper Tube Packaging Corporation, NJT Green Service Co., Ltd.
- 2021** **Launch aluminum tube business at Malaysian plant.**

The history of copper products, technology, and products

Copper Alloy Tubes for Condensers

- 1932** Started manufacture of 'Albrac tubes' for condensers.
- 1952** Started research on titanium.



- 1963** Development of 'AP Bronze' alloy tubes for condensers (receives Okochi Memorial Foundation Production Prize).
- 1970** Started delivery of titanium tubes to thermal power plants.
- 1976** Development of "APF" : inner corrosion resistance process technology for condensers.



- 1981** Development of duplex (titanium and brass) tube.
- 1982** Started delivery of titanium tubes to nuclear power plants.
- 1996** Development of titanium-inner-coating tube for condensers.(awarded the Technology Award of the Japan Copper and Brass Association).



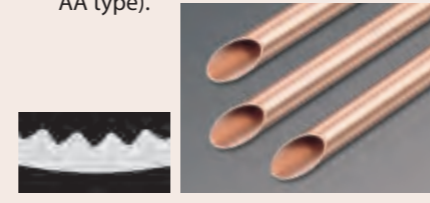
- 2000** Started application of titanium duplex tubes in nuclear power plants.
- 2015** Expanded sales volume of copper alloy tubes for heat exchangers for sugar manufacturing equipment.



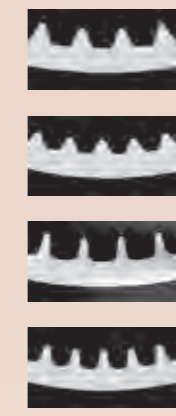
- 2020** End of manufacturing and sales of titanium tubes
- 2023** End of manufacturing and sales of copper alloy tubes for condensers.

Inner Grooved Copper Tubes for Air-conditioning (Ripple-finned tubes)

- 1976** Smooth tubes.
- 1979** Started production of inner grooved copper tubes (Ripple-finned tube: AA type).



- 1983** Improved ripple-finned tubes (FF type).
- 1987** Improved ripple-finned tubes (FN type).
- 1994** Improved ripple-finned tubes (High & slim type).
- 1998** Improved ripple-finned tubes (High lead angle type).



- 2002** In-house development of rolling oil for inner-grooved copper tubes and achievement of coexistence of reducing residual oil and increasing lubricity.
- 2003** Started mass-production of thick type tubes for CO₂ ATW heat pump (EcoCute)
- 2006** Installation of heat transfer performance assessment equipment for CO₂ heat exchanger and its tube.
- 2008** Started manufacture of thin-walled ripple-finned tubes. Started mass-production of high-strength copper tubes.
- 2014** Started mass-production of "DANT™": Defend Ant's Nest Corrosion Tube.



Various metal processing tubes, heat exchanges, fittings, etc.

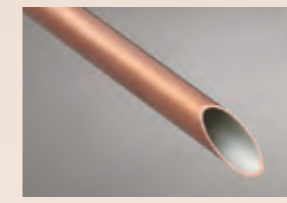
- 1933** Started production of copper tubes for water supply.



- 1972** Introduction of technology manufacturing insulated copper tubes 'PRISOL Tube P-STC'.
- 1979** Started selling Electrode Material Cu-Cr-Zr.



- 1984** Started selling Copper Heat-Pipe.
- 1990** Development of "STC" : Super-Tin(Sn)-Coating copper tube for building piping.



- 2006** Installation of heat transfer performance assessment equipment for heat exchanger using CO₂ refrigerant and its tubes.
- 2009** Started mass production of CT-shut (exclusive product in Hokkaido district)
- 2012** Started mass production of Thermoexcel. Started mass production of Cross Rouletted Tubes. Started mass production of heat exchanger for CO₂ ATW heat pump (EcoCute) Started mass production of CLTs.
- 2018** Started mass-production of RG press.

- 2022** Started production of inner grooved aluminum tube.

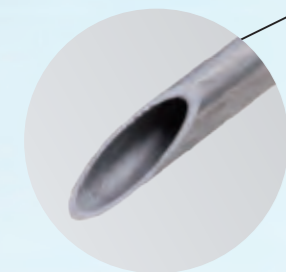


We will deliver safety and security to your life.

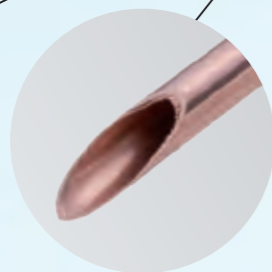
We are developing new products such as heat exchange products that are friendly to the global environment and support refrigerant saving by leveraging technology based on our many years of experience and maximizing the characteristics of materials.

For air conditioner

The heat exchanger of air conditioner includes heat transfer tubes with spiral grooves on the inside. Our Inner Grooved Copper Tubes have been trusted by our customers for over 40 years. In addition, NJT is actively advancing product development and technological innovation, such as "DANT™" copper tube which defend ant's nest corrosion, and "Inner Grooved Aluminum Tube". Open the covers of the air conditioner indoor unit. There are our products in it.



Inner Grooved Aluminum Tube



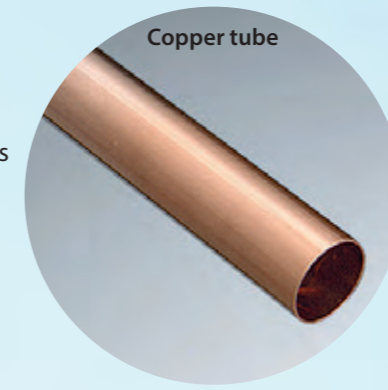
Inner Grooved Copper Tube



Defend Ant's Nest Corrosion Tubes (DANT™)

For refrigerator

Refrigerator is essential for daily life. It is required not only cooling performance, but also reliability. Our heat transfer tubes help to the longevity of equipment and enhancing reliability.

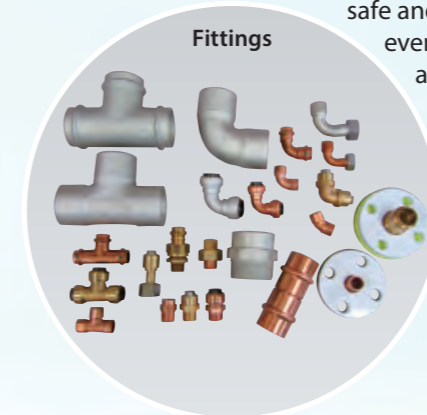
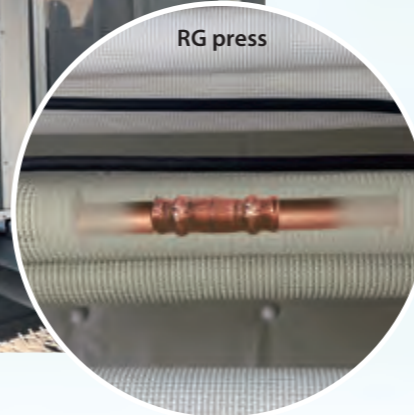
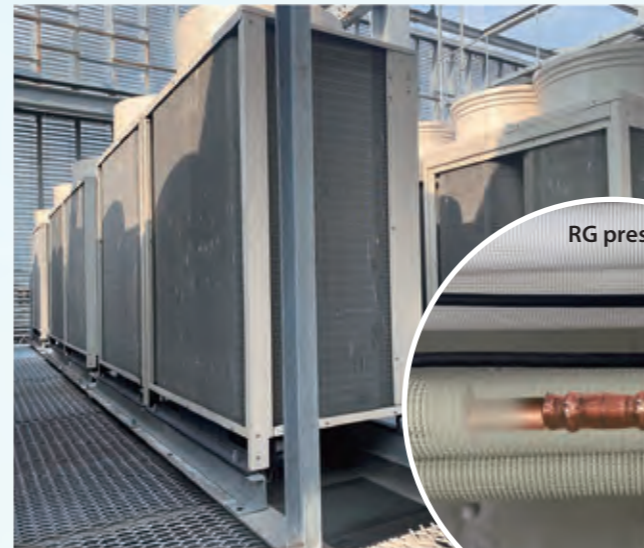


Copper tube maximum production quantity (annually)

about **48,000 tons**

For air conditioning equipment

Air conditioning equipment is installed in the majority of buildings, and our products are also used in plumbing systems. With over 60 years of experience, our plumbing fittings are highly regarded for their reliability. We are continuously engaged in the development of new products, such as 'RG Press,' which enables safe and secure installation in lesstime, even by unskilled contractors, as well as various one-touch joints for water plumbing systems.



We offer a variety of high-performance heat exchanger models that utilize various in-house manufactured heat transfer tubes by combining our brazing and other copper tube machining techniques, our heat exchanger design capability and our evaluation techniques.

The Inner grooved aluminum tube archives heat transfer coefficient equal to or higher than copper tube and the heat transfer performance higher than the straight grooved aluminum tube.



Copper tube

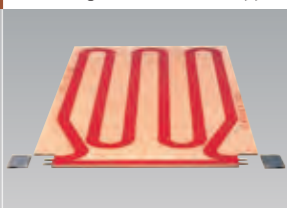
STC Copper Tube

STC (super tin coat) copper tubes are coated with a uniform layer of tin on the inner surface of the tube using a special technique. This greatly reduces the elution of copper ions, making the tubes exceptionally resistant to pitting and corrosion.

Floor Heating Panel

This hot-water type floor heating panel is a clean heater system to transfer heat to the floor by circulating hot water in the copper tube.

Application product of copper tubes



Medical Color Tubes

These copper tubes are manufactured for medical gas piping with extremely clean inner surface. The color-coded and gas-named-printed film help in identifying the type of medical gas flowing to prevent incorrect piping.

Heat exchangers



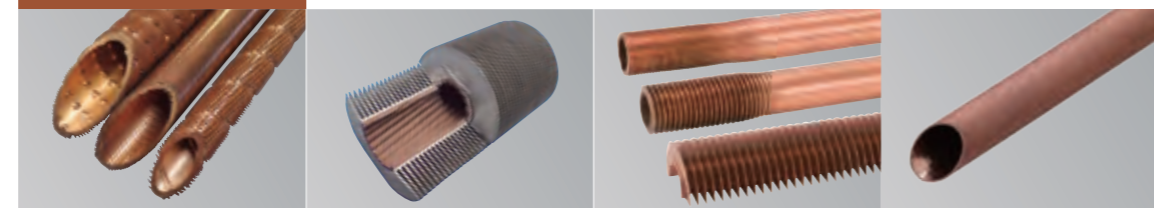
Water-CO₂ Heat Exchanger

Bearing Oil Cooling Unit

Water Cooled Reactor Coil

Duplex Tube Heat Exchanger with Thermoexcel

Finned Tube



Thermoexcel

Bimetal Finned Tube

Low Finned Tube, Middle Finned Tube, and High Finned Tube

Cross Rouletted Tube

Complex surface and cross-sectional shapes can be designed flexibly, dramatically improving heat transfer performance.

Aluminum Tube



Inner Grooved Aluminum Tube

Thermoexcel Aluminum Tube

Electrode and electrical material



Electrode Material Cu-Cr-Zr

Motor armatures for cars (commutators)

Due to its extremely high electrical conductivity and superb workability, copper is widely used in applications such as spot welding and electrode materials in the automotive industry.

Heat-Pipe



Heat-Pipe

Cooler for IGBT, GTO thyrister

Heat pipe has wicks and vacuum structure partially filled with some amount of working fluid.

We have superior technique that we can proudly present to the world.

Since establishing Sumitomo Shindojo in 1897, we have continuously manufactured copper tubes. Through our long-term and abundant experience and research, we have established production systems to deliver high-quality products to our customers. We have been manufacturing tubes that fully satisfy customer needs by being forefront as development of copper tubes, and also we are focusing on cost performance of quality.

Casting



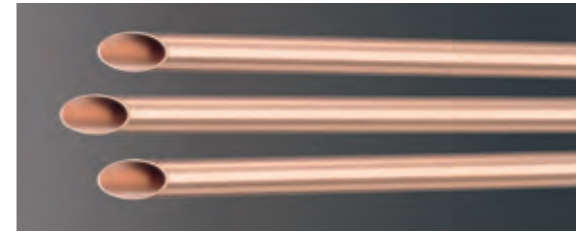
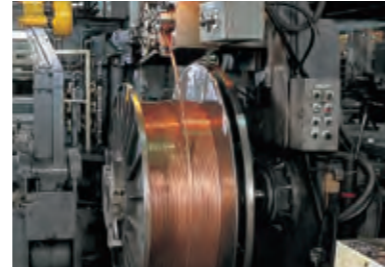
5000 ton press



Bull block

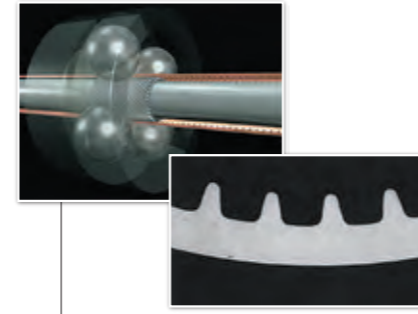


Spooler



Ripple finned tube (R/F)

To design the 'fins', a grooving plug is inserted into the tube and small steel balls rotate at very high speed on the outer wall.



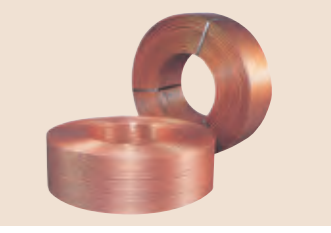
The tubes are annealed into specified mechanical properties.



Straight tube



Level wound coil (LWC)



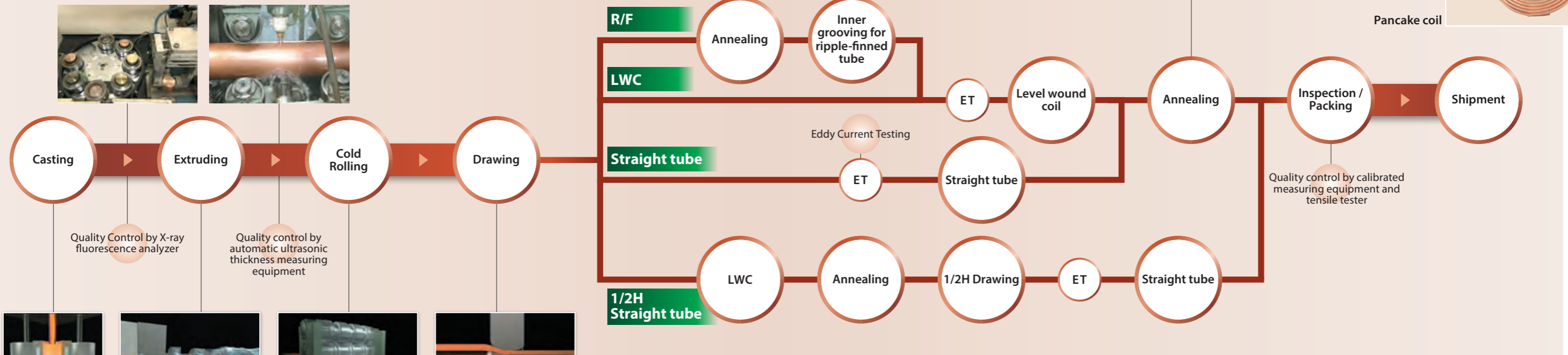
Vortex-layer tube (VOLT)



Pancake coil



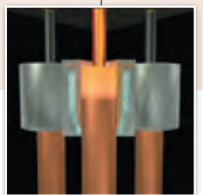
Production process of copper tubes and inner grooved copper tubes



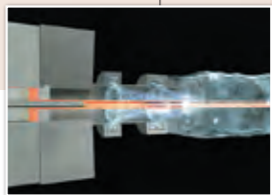
Quality Control by X-ray fluorescence analyzer

Quality control by automatic ultrasonic thickness measuring equipment

Quality control by calibrated measuring equipment and tensile tester



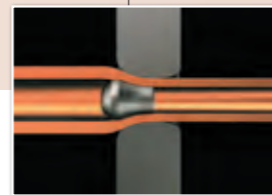
The molten copper continuously flows in the casting mold to be cast in 10-meter-long ingots.



Copper billets are extruded out into the shape of tube through the gap between the mandrel and the die.



The extruded tubes are rolled by grooved rolls and carved mandrels.



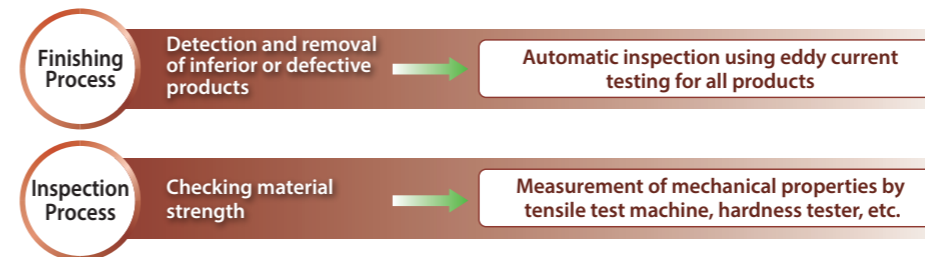
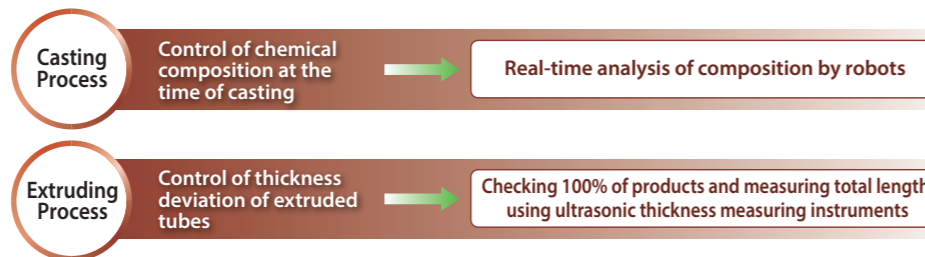
The tubes are 'drawn' using a floating plug and a conical die to reduce the diameter and wall thickness.

Quality Control

In order to deliver our products that satisfy customers, NJT Copper Tube conducts comprehensive quality control using computers through all processes from raw material bullion to shipment.



Quality Control by optical emission spectrometer



Corporate Outline

Corporate name	NJT Copper Tube Corporation
Established	October 2011
CEO	Ishiguro Norimitsu
Capital	100,000,000 yen
Shareholder	Aspirant Group Inc. (75%) Daiwa PI Partners Co., Ltd. (25%)
Employees	About 600
Business	Manufacture and sales of copper and copper alloy ingots, tubes and bars, and Application Product such as various metals application tubes, heat exchangers and fittings.
Head office	100, Shinmichi, Ogi-cho, Toyokawa-shi, Aichi 441-1295, Japan
Subsidiary	NJT SOLUTIONS (MALAYSIA) SDN. BHD.
Location	Lot P.T.630, Jalan Emas 1, Nilai Industrial Estate, 71800 Nilai, Negeri Sembilan Darul Khusus, Malaysia
TEL	+60-6-7992130

Building on strong ties with the local community, we leverage our global supply chains to manufacture and deliver optimal, eco-friendly products.



Summer festival



Head office; Copper Works

JIS H 3300, ISO9001/ISO14001 certified factory.



Hongu Center



Malaysia office NJT SOLUTIONS (MALAYSIA) SDN. BHD.

Production item; Inner Grooved Aluminum Tube

NJT Copper Tube Corporation

Head office / Copper Works

100 Shinmichi, Ogi-cho, Toyokawa-shi, Aichi 441-1295, Japan
TEL: +81-533-93-2311 FAX: +81-533-93-5119

East Japan Sales Section / Application Product Sales Section

1-8-1, Nihonbashi Kayaba-cho, Chuo-ku, Tokyo 103-0025, Japan
TEL: +81-3-6631-9501 FAX: +81-3-6631-9509

West Japan Sales Section

4-2-16 Koraihashi, Chuo-ku, Osaka-shi, Osaka 541-0043, Japan
TEL: +81-6-7639-1881 FAX: +81-6-7639-1882

Fittings & Plumbing tubes Sales Section

● Tokyo Group

1-8-1, Nihonbashi Kayaba-cho, Chuo-ku, Tokyo 103-0025, Japan

● Nagoya Group

1-27, Hongu-cho, Minato-ku, Nagoya-city 103-0026, Japan

● Osaka Group

4-2-16 Koraihashi, Chuo-ku, Osaka-shi, Osaka 541-0043, Japan

● Kyushu Group

1-5-1, Hakata Ekimae, Hakata Ward, Fukuoka-city 812-0011, Japan

<https://www.njt-copper.com/>

