

EXECUTIVE Report

SJT Looks Ahead While It Reflects on Past

Eighty Years of Innovation Culminates in New Production Line

Surviving for 80 years is quite an accomplishment in itself, whether for an individual or a company, and it is even more a cause for celebration when the company is innovative and thriving after 80 years.

For Suomen Jäähdytintehdas Oy (SJT), also known as the Finnish Radiator Manufacturing Company, its 80th anniversary is an opportunity not

and service to its customers throughout Finland, Scandinavia, France, Japan and the United States. Current business is approximately 90 percent for OEM parts and 10 percent for the aftermarket.

An Early Adopter

Managing director Hannu Vetikko first heard of CuproBraze at a seminar in Frankfurt, Germany eight years ago. According to Vetikko, SJT has been at the forefront of innovative radiator design throughout its history. “Our success lies in constantly surveying the industry landscape and actively researching each new technology that emerges in the marketplace,” says Vetikko. “We evaluate a new technology based on its merits rather than its popularity. SJT is often among the first to adopt and further advance promising new technology.”

The International Copper Association sponsored the Frankfurt seminar shortly after the CuproBraze process had been demonstrated on a pilot scale. Vetikko quickly understood the implications of using CuproBraze rather than aluminum brazing. It wasn't long before SJT's management was convinced that CuproBraze technology would result in better products and more flexible production compared to purchasing aluminum cores from abroad. “Clearly, it is superior to any prior technology,” says Vetikko. “We firmly believe that eventually all charge air coolers will be made of copper and brass using the CuproBraze process.”

SJT management decided on the CuproBraze process for its next-generation of radiators and charge air coolers because it would enhance the company's reputation for quality and service and increase sales.

SJT took its first steps towards adopting the technology in 2004, when it was decided that its sister company Suomen Jäähdytinsä Oy (SJO) would manufacture CuproBraze heat exchanger cores while SJT focused on sales and marketing as well as the design and assembly of finished products. This decision was the subject of an earlier report [1].

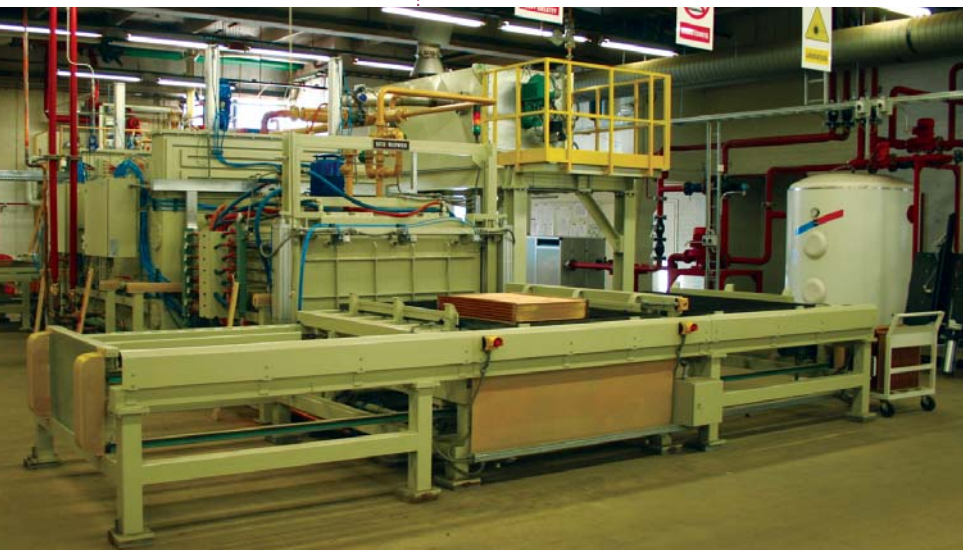
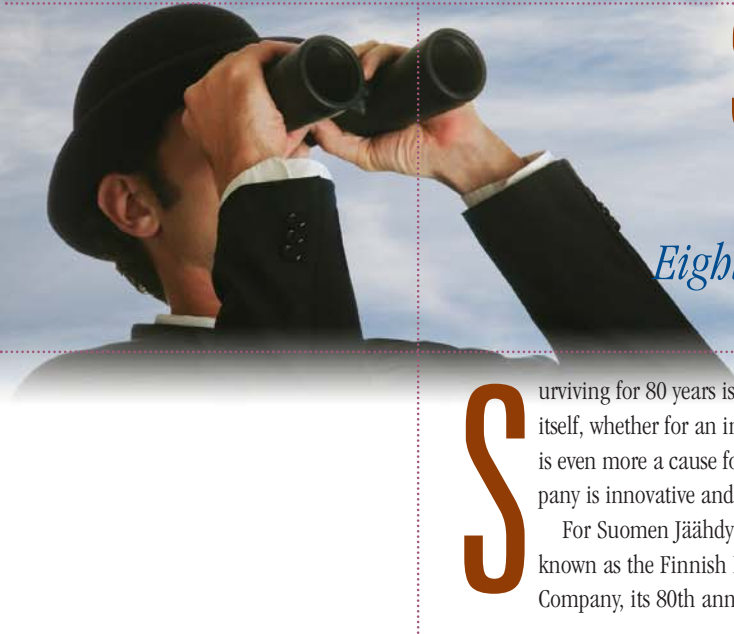
only to reflect on its memorable past but also to celebrate prospects for a bright future powered by innovative CuproBraze® technology.

SJT was founded as the Finnish Manufacturing Company in 1926 by three tinsmiths. It initially produced radiators for the automotive industry but, as vehicle technology advanced, it expanded into other markets, including the design and production of charge air coolers (CACs), heaters and other fabricated sheet-metal products for heavy-duty trucks and off-road vehicles, primarily for construction and agricultural applications.

With the inauguration of its new CuproBraze production line, SJT is now poised for another 80 years of industry leadership. It has built a solid reputation based on superior quality

This new three-chamber furnace with a double in-out operating mode increases productivity because it allows for more efficient use of the middle (brazing) chamber, where the holding time is the shortest.

This year SJT celebrates 80 years of success and looks forward to the production of CuproBraze charge air coolers.



The International Copper Association, Ltd. (ICA)

is the leading organization for the promotion of the use of copper worldwide. The Association's twenty-nine members represent about 80 percent of the world's refined copper output, and its six associate members are among the world's largest copper and copper alloy fabricators. ICA is responsible for guiding policy, strategy and funding of international initiatives and promotional activities. With headquarters in New York City, ICA operates in 28 worldwide locations through a network of regional offices and copper development associations.

For general mailing information about the *CuproBraz*e process or ICA's *CuproBraz*e consulting services, please contact International Copper Association at mrosario@copper.org. For technical information contact cuprobraz@copper.org. For European inquiries contact ndc@eurocopper.org.

References

1. International Copper Association, *CuproBraz*e Executive Report, "Finns Find Profit in Special Products: Superior Quality and On-Time Delivery Lead to Success," Number 32. www.kellenpr.com/clientnews/cuprobraz_er.html

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See www.cuprobraz.com for additional materials suppliers, equipment makers and heat-exchanger manufacturers.

Since then, SJT and SJO have taken important steps to greatly increase *CuproBraz*e production. A major milestone was reached in late 2004 when SJT announced the acquisition of a midsize volume-production brazing furnace from SECO/WARWICK. This furnace allows for easy loading and unloading from both front and rear, significantly reducing process times and increasing capacity. The furnace can braze parts of many sizes and geometries with a maximum core size of 140 cm × 130 cm. To preserve the environment around Suolahti, the furnace is equipped with an after-burner unit, which removes unwanted chemical emissions from the exhaust of the brazing operation.

Last year, SJT acquired more manufacturing equipment, including a tube mill from Mill Masters, a fin mill from Livernois Engineering and a fin tip brazing-paste applicator from Schöler. The tube mill contains a high-frequency welding station to convert brass strip into the flat tubes that are used in radiators and charge air coolers. As SJT received shipment of this capital equipment, its staff was trained extensively on its use. The final link in the production line will be the installation of a header slurry paste applicator from Schöler.

Impact on Business

Last year, SJT realized more than €6 million in OEM and €500,000 in aftermarket business, which is a healthy income for a company traditionally focused on niche markets. The most important market for SJT is the agricultural sector, for which it makes heat exchangers for tractors and combine harvesters. Its heat exchangers are also used in many other industries for various applications such as mining equipment, construction equipment, terminal tractors and marine diesel engines.

With its production line complete, SJT is moving forward in designing, developing and manufacturing its first generation of *CuproBraz*e radiators and charge air coolers. Says Vetikko, "We have known about durability issues with aluminum for more than eight years. Our customers are now testing our prototypes and are in the final certification stages. We expect to be in full production on the *CuproBraz*e line in the second quarter of 2006."

For the past two years, Vetikko and the rest of his staff have worked closely with the *CuproBraz*e Brazing



Fins, tubes and side plates are assembled together on a core assembly table. This large radiator core is ready for brazing.

Center and Brazing Team in Västerås, Sweden. Operated by Outokumpu, the Brazing Team supports SJT and other prospective users by providing the latest information on best practices, brazing methods and product designs. In addition, SJT uses Outokumpu's automotive wind tunnel in Sweden to evaluate *CuproBraz*e heat exchanger designs.

The Brazing Team employs experts on brazing processes and heat exchanger design. Long before production could begin, the Brazing Team worked closely with SJT's own technical staff to improve manufacturing processes and develop prototypes for customer testing.

Looking Back . . . and Ahead

Many years of planning, preparation, training and hard work are culminating this year in the inauguration of a complete *CuproBraz*e production line, which coincides with the 80th anniversary of SJT. Thus, SJT is looking ahead even as it looks backwards on its past.

Anthony Lea, Senior VP, Strategy and Marketing, of the International Copper Association, Staffan Anger, President, Outokumpu Copper Strip and local dignitaries were present to celebrate SJT's innovative past and bright prospects for the future.

The event included a tour of the new *CuproBraz*e production line as well as the introduction of a prototypical copper-brass charge air cooler. The latter features a unique inner fin made of one piece. The one-piece design reduces installation times, thereby increasing productivity and profits. It is the first of its kind worldwide, which is a fitting tribute to SJT's innovative past and bright prospects for the future. ■

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