

Metallurgical Applications

Solutions for heat transfer

LUVATA
Partnerships beyond metals





Quality and reliability when the heat is on

Luvata is a world leader in metal fabrication, engineering and design. With operations on three continents, you will find our components and our expertise in some of the world's most successful technologies, including photovoltaic energy, MRI scanners, cooling and refrigeration, and even the Large Hadron Collider. In fact, anything that contains copper is likely to have felt Luvata's influence.

We have been working in Metallurgical Applications for nearly four decades. We use our expertise and know-how to provide tailor-made solutions for foundries, smelters, furnace mills and for the electrolysis industry. Every customer is different and we pride ourselves on our innovative approach and versatility in coming up with the right solution, time after time.

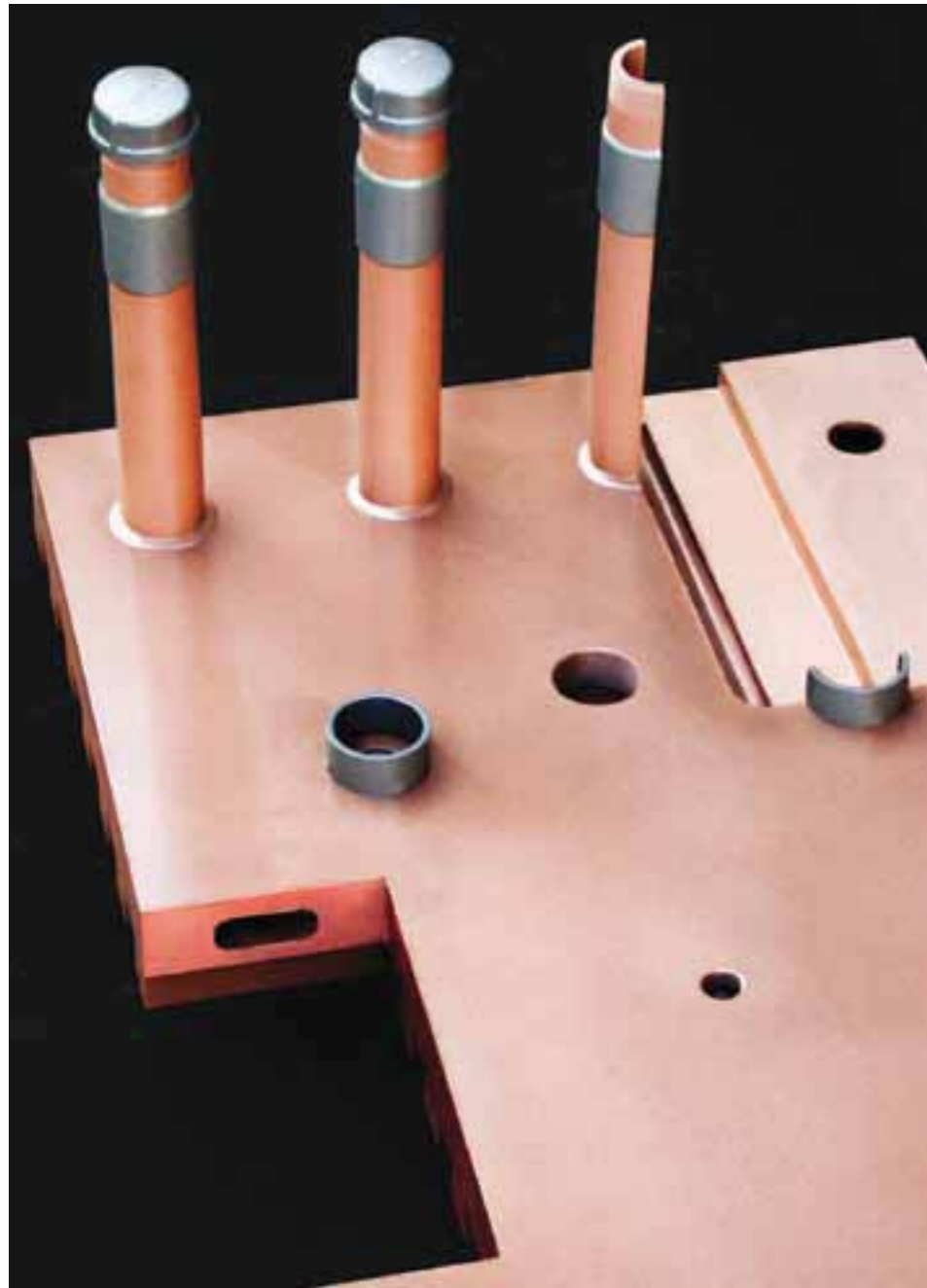
We work closely with our customers to determine the right approach. From end-to-end solutions where we design, manufacture, deliver and install everything; to simply supplying an off-the-shelf product; we are happy to help. Nobody understands copper like Luvata, and when you buy into our expertise you can rest assured that our first class project management, after sales service and attention to detail come as standard.

“At Luvata we pride ourselves on knowing our customers' business as well as they do. So, with many years in the industry, we are well aware that if you are operating foundries or blast furnaces, downtime can be very bad news indeed. That is why we have made the quality and reliability of our heat transfer solutions our primary concern. We are confident that our track record for reliability cannot be matched in the marketplace, and our customers tell us so too. We are constantly innovating, and finding new solutions to old problems; but our focus on reliability is one constant that we will never change.”

Jussi Helavirta
Executive Vice-President
Special Products Division

Copper staves for blast furnaces

Nowhere are conditions more demanding than in foundries and blast furnaces, so our specialist knowledge and experience are invaluable. We work closely with some of the world's leading engineering companies and we are constantly seeking out new solutions to improve efficiency for our customers, increasing productivity and optimising material usage.



Copper staves for blast furnaces

Staves are essential for protecting the steel shells of blast furnaces, and copper, with its superb conductivity, is an ideal material for them. At Luvata we have created a unique manufacturing process for copper staves. We use a continuous casting process to produce the cooling channels in the copper slabs. These are then hot-rolled to recrystallise the grain structure.

There are two key benefits to this innovative process. Firstly, the stove design is smaller, reducing weight and therefore the material cost. Secondly, the oval shape of the staves gives them a greater surface area, making them more efficient and creating more furnace volume.

We produce many other specialist products for metallurgical applications, including copper slag runners for blast furnaces and special elements for blast furnace hearths and tap hole areas.

Cooling elements and slag launders



Cooling elements and slag launders

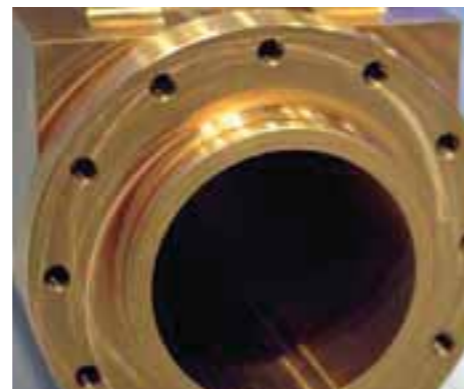
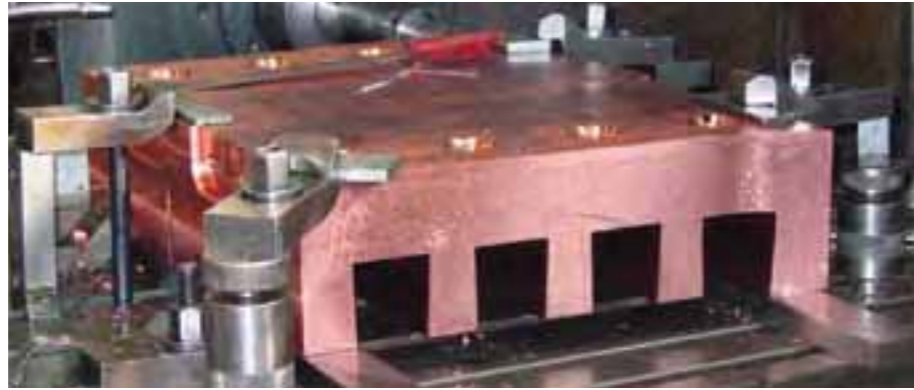
Luvata's manufacturing process is fully integrated, from the delivery of the pure cathodes to the production of the final product, so we can be sure that our quality is second-to-none.

We have a flexible approach and are happy to design a complete solution, or to create a product from a customer's own drawings. Our runners can be produced from separate sections for the bottom and wall cooling, with cast-in water channels, or alternatively from one rolled, bent plate with drilled water channels. We can also offer a choice of hot-rolling and drilling, or even mould casting, depending on the customer's precise need.

We also produce components for electric arc furnaces, where high thermal and electrical conductivity are essential. These include cooling elements, electrode holders and bus tubes.



About Luvata



What does Luvata see for the future?

We have always aimed to improve our customers' products and processes, and to help them increase the efficiency of their businesses. But our vision is bigger than that. If human society is going to maintain the lifestyle that we all enjoy today AND offer

it to emerging societies, we will all need to become much more efficient and to take much less from the planet. We are helping companies to make their products, processes and production more sustainable: do more, waste less, and pollute less.

What's Luvata's plan for getting there?

Luvata is increasingly bringing its expertise and dedication to high-growth regions and markets around the world. We are stepping into niche and specialist markets with our high-value,

engineered solutions, and we are developing new solutions in partnership with our customers to conquer challenges at the front end of market demand.

How does Luvata behave?

In doing all this, we resolve to be the partner of choice for our customers, the employer of choice for our staff, and to be a positive

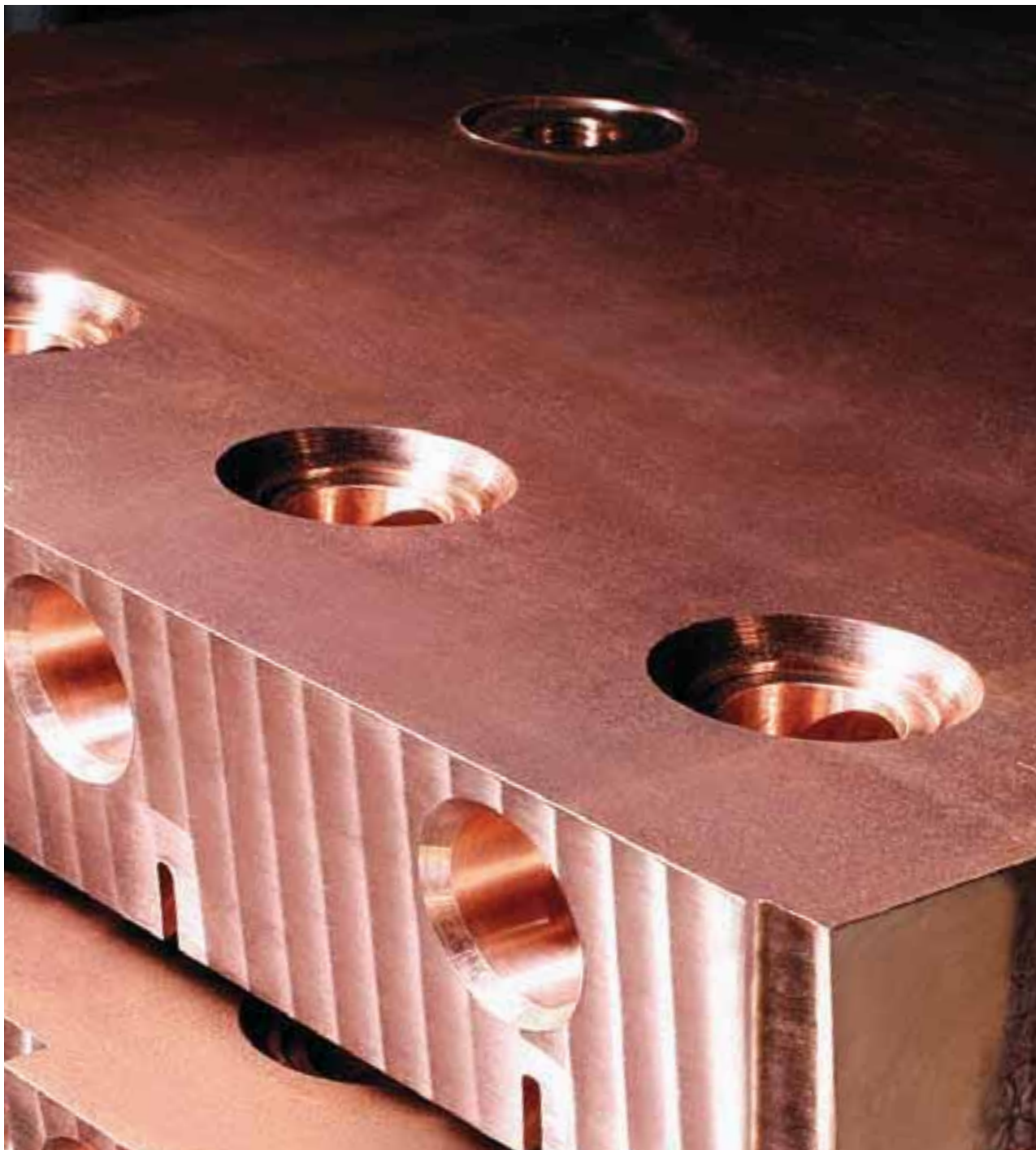
and responsible friend to everyone else. We strive to be open-minded and focused on getting results; and when we promise, we deliver.

Where in the world are we?

The sun never sets on Luvata: our global footprint stretches across America, Europe and Asia. Our diversity of locations, cultures and markets gives us access to a wealth of knowledge and expertise

that simply keeps growing. It means that we are local to our customers, wherever in the world they are and can be responsive to their needs, including fast local delivery straight to the door.





About Luvata

Luvata is a world leader in metal fabrication, component manufacturing and related engineering and design services. We are committed to partnering with our customers to help them increase their competitiveness. Our products and services enable our customers to improve their products and operational efficiency and reduce tied-up capital. Because we focus on our customers' results and are unfailingly reliable, we are the partner on which our customers base their future development. See www.luvata.com for local contacts in your country.

www.luvata.com

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