

# Beyond the ordinary

Tubes



Heat Transfer Solutions



Special Products



Customer needs are continually evolving and business requirements are ever changing.

As a result, it's more important than ever to have a partner that not only understands the dynamic needs of your business but also has the proven expertise, global resources and leading edge technologies to help you get ahead.

Luvata's strategy is to understand its customers' challenges and to deliver solutions that bring improvement to products and processes. It's about commitment, collaboration and continually going beyond the ordinary. This strategy is called 'Partnership Beyond Metals.'

Luvata is a world leader in metal solution manufacturing, heat transfer technology and engineering and design services for everything from batteries to MRI machines and from air conditioners to photovoltaic modules.

All over the world, companies are finding better ways to do more, for more people and waste less in the process. All over the world, Luvata is helping them.

**Come. Experience Luvata.**

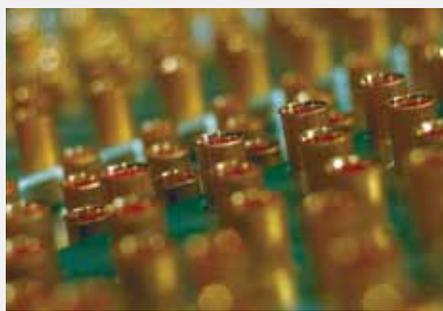
## The Luvata Advantage

Our innovative spirit and willingness to listen, solve problems and create added value for our customers has made us indisputable market leaders. From an idea, to design and manufacture; and from the first order to delivery and down-stream performance, we provide customized solutions as well as the highest quality standard products on the market today.

Luvata develops products and solutions that utilize materials and processes to their fullest. Our proposition is to improve customers' products and manufacturing processes. Our diverse knowledge of metals, alloys, coatings, production processes and end markets enable us to do just that.

The vertically integrated processes at Luvata allow for total control of quality throughout the entire manufacturing process, delivering the highest quality products in the industry. Our comprehensive capabilities, including upcasting, extruding, drawing, annealing, cold forming and machining, enable us to adapt our processes to deliver the optimal solution.

**Ask us what we can do for you.**





## The Tubes Advantage

Luvata specializes in both roll-and-weld and cast-and-roll technologies. We offer an integrated supply chain for both smooth tubes and enhanced inner surfaces in high performance alloys, delivering in formations that best suit the customers' production process.

Global requirements for energy efficiency and refrigerants in air-conditioning systems are becoming more stringent. Luvata is paving the way through continuous development of tube surfaces with higher heat transfer performance. We focus on reducing raw material costs through weight reduction, high performance alloys, high efficiency tube surfaces and process improvements, while improving overall system performance. A prime example is the material cost savings benefits of our UNILLOY® (pat. pending).

Luvata manufactures copper and aluminum tube, supplying the largest continuous Tube-In-A-Cube® (TIAC) coils available in the market today. TIAC® uses the proven "eye-to-the-sky" payoff system requiring fewer changeovers; this means reduced material handling, greater equipment uptime and less scrap. Skid weights can be as high as 2200 lbs with minimum packaging material.

Our facilities are located in the major manufacturing centers of the air conditioning and refrigeration industry, enabling us to offer global know-how with local service. Our continuing research and development delivers tubes with ever increasing heat-transfer performance and offers the foundation from which our customers base their future product development.

## Tube Products

- Inner grooved tubes
- Smooth tubes
- Hairpins

## Product Applications

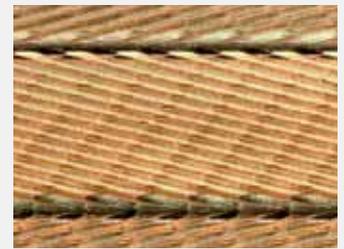
- Air conditioning (residential and commercial)
- Refrigeration (commercial and transport)
- Heat-exchanger manufacturing (all HVAC&R segments)



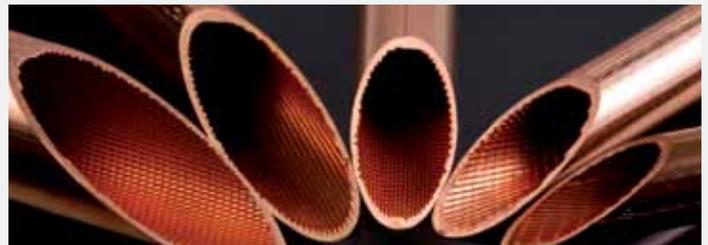
Pins-In-A-Bin®



T-Proof® Technology



Herringbone Crosshatch® (2V-XHT™)



UNIGUARD®



Tube-In-A-Cube® (TIAC®)





## The Heat Transfer Solutions Advantage

As the world's largest coils-and-coolers group with vast heat transfer expertise, Luvata is committed to designing and building the best solution to every individual need, providing our customers with the flexibility of ordering a single replacement coil or thousands of coils at a time.

We offer air-to-liquid heat exchanger solutions for virtually any application, paying special attention to details that lower operating costs of the unit. We aim to improve its size, weight, footprint and efficiency. From comfort control to process-heating or cooling, Luvata has the optimum solution for your application.

Our heat exchangers are available in nearly 70 unique fin surfaces created by combining a wide variety of fin patterns, corrugation and tube sizes. We supply them in copper, aluminum, stainless steel or other specialty alloy tube and fin materials. The latest in aluminum microchannel technology is available in a range of configurations to match your most demanding heat-exchanger challenges.

The variety and versatility of our air-cooled condensers, fluid coolers and unit coolers is unparalleled in the industry. From a small refrigeration unit for a supermarket to a large industrial cooler for an oil rig, we apply our heat transfer expertise to meet your precise temperature needs.

In addition to coils, we offer coating services that extend the life and operating efficiency of HVACR equipment. Talk to us about your challenges and see how our heat-transfer experience and knowledge could work for you, too.



Coil slabs



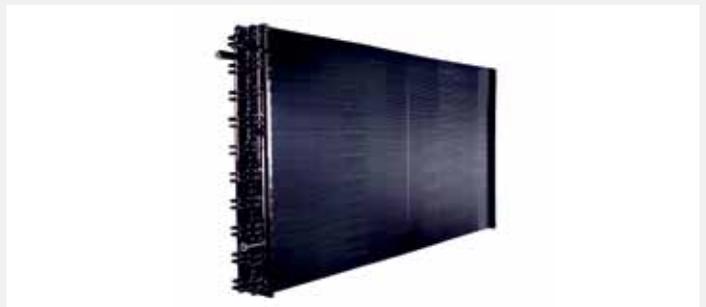
Generator and motor cleanable coolers



Microchannel coil



Steam coil



Coated coil





## Heat exchangers

Round Tube Plate Fin (RTPF) and microchannel type products for various applications including:

- Condenser
- Evaporator
- Steam
- Water and fluid

## Air Cooled Condensers and Coolers

Ventilated products including:

- Unit Coolers
- CO<sub>2</sub> coolers
- Air-cooled condensers
- Generator motor coolers
- Transformer coolers
- Dry/fluid coolers

## Coil-coating services

- ElectroFin® E-coat (full immersion and number one choice by OEMs for corrosion protection)
- Luvata Insitu® (in-house and on-site spray applied coil and cabinet corrosion-resistant coating)

## Product Applications

- HVAC – residential, commercial, industrial, mobile and military
- Refrigeration – supermarket, food service, vending, storage and transport
- Industrial – processing, high-tech cooling, equipment cooling and heating, dryers and power generation



Transformer oil cooler



Low profile unit cooler



Low velocity dual flow unit cooler



1 X 2 MicroChannel air cooled condenser



2 X 4 Fluid cooler



## The Special Products Advantage

Special Products offers a diverse and highly specialized range of products. The division is renowned for helping customers to go beyond the frontiers of design and manufacture in markets from hospital equipment to car production, and renewable energy to consumer products.

## Formed Products

Luvata is the world's leading manufacturer of resistance welding electrodes including such internationally recognized brands as A-Trode®, C-Trode®, Cupal®, Nitrode® and Z-Trode®. We produce a complete line of resistance and arc-welding products and accessories including: electrodes, shanks, adapters, contact tips, diffusers, nozzles, and braze welding wire.

Luvata is a key supplier of electrical contacts, connectors, ordnance and plumbing fittings. We can offer cost-saving solutions by taking products previously manufactured from bar and re-engineering them to be cold-formed. The net result is a high quality and repeatable product with a reduction in material cost.

Luvata continues to grow as one of the most respected manufacturers in the industry offering:

- Experienced technical support and on-site assistance
- Single integrated global supply chain
- Strong customer focus and outstanding customer service
- Exceptional performance, quality and reliability

With Formed Products' manufacturing facilities located in Europe, Asia and the Americas, custom solutions are available for our customers on a just-in-time basis wherever they may be located.

## Metallurgical Applications

We supply the ferrous and non-ferrous metal industries with custom-designed solutions with high thermal or electrical conductivity such as bus bars, copper staves, cooling elements and other welded and machined products. Our expertise includes reliable and effective project management and excellent know-how in copper welding.



Braze / welding wire



Resistance welding electrodes



Formed components



Contacts



Arc welding consumables



Cooling elements

## Hollow Conductors

The ideal material for hollow conductors is Luvata's high conductivity, oxygen-free copper OF-OK® which offers high electrical and thermal conductivity. Its freedom from oxygen ensures excellent brazeability and weldability, making it superior to oxygen-bearing copper grades.

Luvata has developed the tools to produce hundreds of different hollow conductors in many different shapes and sizes. Long continuous lengths result in a reduced number of joints and therefore offer lower costs and risk of leakage.

## Copper Alloy Wire

Luvata is a fully-integrated producer of round, square and rectangular wire from 0.006" to 1.000" available in over 60 copper alloys commonly used for batteries, electrical power, renewable energy, ordnance, welding, cold forming and aquaculture.

Luvata has facilities on three continents, manufacturing its branded photovoltaic wire Sunwire®. More recently, Luvata has introduced its antifouling wire Seawire® for aquaculture applications.

Luvata specializes in 'precision cut-to-length' where weight accuracy is critically important. This precise weight control and burr-free cutting to customers' specific length and temper requirements delivers consistent product performance every time.

## Superconductors

Luvata is a recognized leader in the supply of superconductive wires, including copper-stabilized NbTi and Nb3Sn, for a variety of superconducting applications including medical diagnostic systems, high energy physics projects, scientific instruments and industrial applications.

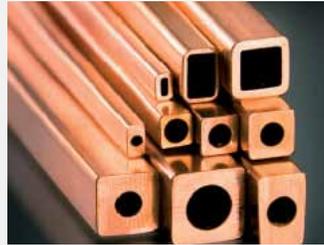
Luvata superconductive wires have played prominent roles in such internationally recognized high-energy physics projects as CERN, KSTAR and ITER.



Seawire®



Sunwire®



Hollow conductor



Precision cut-to-length



Superconductors

**6,400 employees**  
**34 production facilities**  
**16 countries**



## Luvata in North America

### ■ Tubes

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Go to [www.luvata.com](http://www.luvata.com) for a complete listing of all our locations.

### About Luvata

Luvata is a world leader in metal solution manufacturing, heat transfer technology and 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. This focus on our customers' results, backed by our unfailing reliability, makes us a partner on which our customers base their future development.