



**fontargen brazing**  
by voestalpine

# Brazing Solutions for the HVAC Industry





# voestalpine Böhler Welding

Metallurgical Expertise for Best Welding Results

voestalpine Böhler Welding (formerly Böhler Welding Group) is a leading manufacturer and worldwide supplier of filler materials for industrial welding and brazing applications.

As a part of the voestalpine Group, Austria's largest steel manufacturer and one of the world's leading suppliers of specialized steel products, we are a part of a global network of metallurgy experts.

#### **Our customers benefit from:**

- Comprehensive welding and steel know-how under one roof
- Coordinated complete solutions comprised of steel and welding filler metals
- A partner offering maximum economic stability and technological expertise

#### **Customer First**

Absolute customer focus is our guiding principle. We see ourselves as a provider of solutions to challenging welding projects. We ensure that our customers get the right filler metals, use them correctly, and that all welding process parameters are adjusted for the best possible performance. We consider it as our responsibility to guarantee that we deliver to our customers, now and in the future, the best possible solutions. We also strive to develop new products, optimize existing products, and streamline processes so as to achieve very short turnaround times. We focus on technologically advanced industrial sectors and provide products that are geared to their specific requirements.

#### **Three Competences – Three Brands**

In our efforts to afford our customers the best possible support and promote development in line with specific targets, we have built our core competences within Joint Welding, Repair & Maintenance Welding and Soldering & Brazing.

This way we offer our customers the largest and most comprehensive product portfolio of filler materials within our three brands:

- Böhler Welding
- UTP Maintenance
- Fontargen Brazing



## Join Expertise

Silver-containing brazing consumables to your requirements

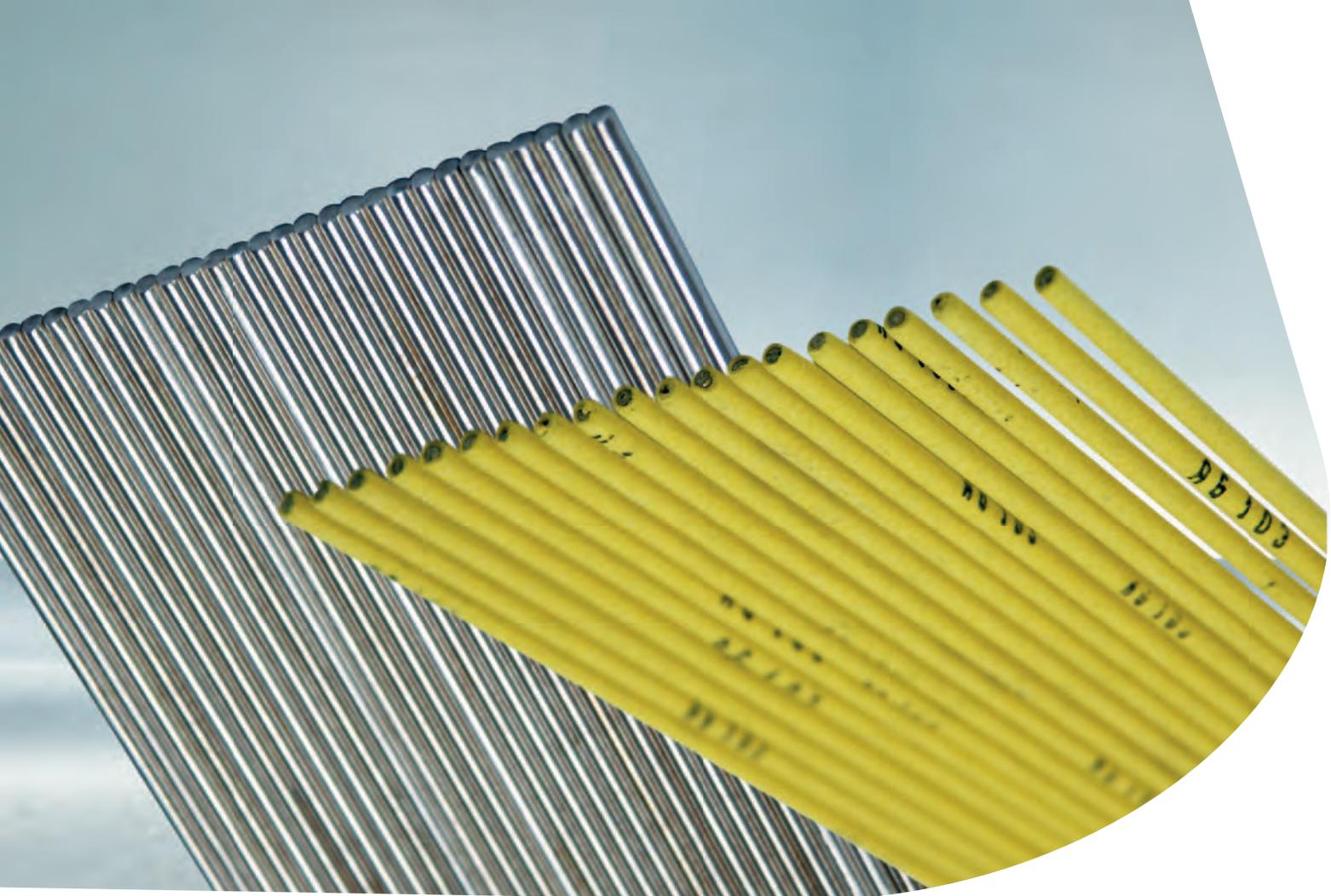
As one of the leading suppliers of silver-containing brazing consumables for the HVAC&R industry, voestalpine Böhler Welding offers customized brazing solutions for a demanding market.

China, Mexico, Middle East and Europe are the main markets for HVAC&R brazing. As a competent partner for brazing applications voestalpine Böhler Welding serves customers in refrigeration, HVAC systems and vehicle air-conditioning as well as in the heat pump technology. The industry trends are taken into account in product selection and product development:

- Ongoing expansion of fast food chains with new equipment needed at smaller locations for cooling large volumes of food.
- Market driven by the increase in frozen food consumption. Need to increase the cold chain quality in order to insure high hygiene standards.
- Avoid breakdown and loss of stocks and insure the concordance regarding all National legislations for food safety standards.
- Reduce production costs by optimizing brazing and post brazing processes.
- Air-conditioning of buildings, offices, cars, a.s.o. to be seen as standard.
- Use of aluminum as new base material for micro-channels heat exchangers (HX).

### Rely on a strong Partnership

voestalpine Böhler Welding is involved in many global R&D projects, partnerships with HVAC&R manufacturers and networks. We provide the technical support for both developing the brazing process and choosing the appropriate alloys types and forms. We run technical process optimization with the customer and support him in its new projects.



## Take advantage of technically proven and customized products

### Applications

We supply products for:

- Heating: heat pumps; water heaters; room heating; towel dryers; induction heaters; thermostats; cookware
- Air conditioning: heat exchangers; chillers; roof top units; data center cooling; room air conditioning units
- HVAC DX systems: air-cooled and water cooled (split; build-up; windows unit; packaged unit; condenser water pump units; cooling towers)
- HVAC central systems: air-cooled chilled and water cooled chilled (condensers; chilled water pump units; chillers; cooling towers)
- Refrigerating: refrigerators; displays (island; multi-deck); reach-in coolers; walk-in coolers; blast freezers; freezers; transportation coolers
- HVAC vehicle: evaporator; compressor; condenser; radiator; car heater cores
- Compressors: rotary; reciprocating; scroll; screw and centrifugal

### Product solutions

- Bare and coated silver rods and wires
- Fluxes
- Copper phosphorus rods and wires (square and round)
- Copper and aluminum wires
- Copper, tin, silver and nickel brazing paste
- Preforms
- Foils

### Services

We provide additional value by offering:

- Process optimization with the customer
- Brazing process debugging
- Courses for the staff
- Expertise in brazing techniques
- Intensive customer support by our competent internal and external staff

### Important benefits for customers

- Solution provider
- Global distribution and sales network
- Broad product range
- Fulfilling special demands
- Engineering support
- ISO 9001 / 14001 Approvals
- AEO Standard
- Deliveries just in time in all packing units
- Financial performance

					Delivery									
DIN EN 1044 (Brazing) EN 29453 (Soldering)	DIN 8513	Deep temperature resistance	Flux Type	Rods bare	Square rods bare	Rods flux-coated	Rods flux-coated (thin)	Rods flux-coated (extra-thin)	Rods flux-coated (flexible)	Foil	Wire	Powder	Preforms	Paste
<b>Copper - Copper<sup>1)</sup> / Copper - Brass<sup>2)</sup></b>														
<b>Brazing</b>														
Overlapping joint														
A 2004	CP 203	L-Cu P 6	-60 °C	- <sup>1)</sup> / F 300 <sup>2)</sup>	•						•			•
A 3002 V	CP 105	L-Ag 2 P	-60 °C	- <sup>1)</sup> / F 300 <sup>2)</sup>		•								
A 3005 V	CP 104	L-Ag 5 P	-60 °C	- <sup>1)</sup> / F 300 <sup>2)</sup>		•					•			
A 3015 V	CP 102	L-Ag 15 P	-70 °C	- <sup>1)</sup> / F 300 <sup>2)</sup>	•	•				•	•	•		•
A 319	AG 106	L-Ag 34 Sn	-200 °C	F 300	•		•	•	•	•	•	•	•	•
A 340	AG 105	L-Ag 40 Sn	-200 °C	F 300	•		•	•	•	•	•	•	•	•
A 320	AG 104	L-Ag 45 Sn	-200 °C	F 300	•		•	•	•	•	•	•	•	•
A 314	AG 103	L-Ag 55 Sn	-200 °C	F 300	•		•	•	•	•	•	•	•	•
Blunt joint														
A 311	AG 203	L-Ag 44	-200 °C	F 300	•		•	•	•	•	•	•	•	•
<b>Soldering</b>														
Overlapping joint														
A 611	S-Sn 96 Ag 4		-200 °C	F 600							•		•	•
A 627	S-Sn 95 Sb 5		-200 °C	F 600							•		•	
<b>Brazing</b>														
<b>Copper - Steel (austenitic)<sup>3)</sup> / (ferritic)<sup>4)</sup></b>														
Overlapping joint														
A 319	AG 106	L-Ag 34 Sn	-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 300	•		•	•	•	•	•	•	•	•
A 340	AG 105	L-Ag 40 Sn	-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 300	•		•	•	•	•	•	•	•	•
A 320	AG 104	L-Ag 45 Sn	-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 300	•		•	•	•	•	•	•	•	•
A 314	AG 103	L-Ag 55 Sn	-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 300	•		•	•	•	•	•	•	•	•
Blunt joint														
A 311	AG 203	L-Ag 44	-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 300	•		•	•	•	•	•	•	•	•
<b>Soldering</b>														
Overlapping joint														
A 611	S-Sn 96 Ag 4		-200 °C <sup>3)</sup> / -70 °C <sup>4)</sup>	F 600							•		•	•
<b>Aluminium - Aluminium</b>														
<b>Brazing</b>														
A 407 L	AL 104	L-Al Si 12	-200 °C	F 400 D2	•		•	•	•		•	•	•	•
				F 400 NHD <sup>5)</sup>										
DIN EN 1045: FL 10: corrosive residues to be removed														
<sup>5)</sup> DIN EN 1045: FL 20: Residues non-corrosive in general. Keep dry														
<b>Soldering</b>														
A 608	L-Pb Sn Cd 4		-70 °C	F 600 AL							•			•
A 633	L-Zn Al 4		-70 °C	F 600 Zn							•			•
<b>Aluminium - Copper</b>														
<b>Soldering</b>														
A 633	L-Zn Al 4		-70 °C	F 600 ZN							•			•

# voestalpine Böhler Welding

## Welding know-how joins steel

Customers in over 120 countries join the expertise of voestalpine Böhler Welding. Focused on filler metals, voestalpine Böhler Welding offers extensive technical consultation and individual solutions for industrial welding and soldering applications. Customer proximity is guaranteed by 40 subsidiaries in 28 countries, with the support of 2,200 employees, and through more than 1,000 distribution partners worldwide. voestalpine Böhler Welding offers three specialized and dedicated brands to cater our customers' and partners' requirements.



**Böhler Welding** – More than 2,000 products for joint welding in all conventional arc welding processes are united in a product portfolio that is unique throughout the world. Creating lasting connections is the brand's philosophy in welding and between people.



**UTP Maintenance** – Decades of industry experience and application know-how in the areas of repair as well as wear and surface protection, combined with innovative and custom-tailored products, guarantee customers an increase in the productivity and protection of their components.



**Fontargen Brazing** – Through deep insight into processing methods and ways of application, Fontargen Brazing provides the best brazing and soldering solutions based on proven products with German technology. The expertise of this brand's application engineers has been formulated over many years of experience from countless application cases.

forwarded by:

Global Industry Segment Management  
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