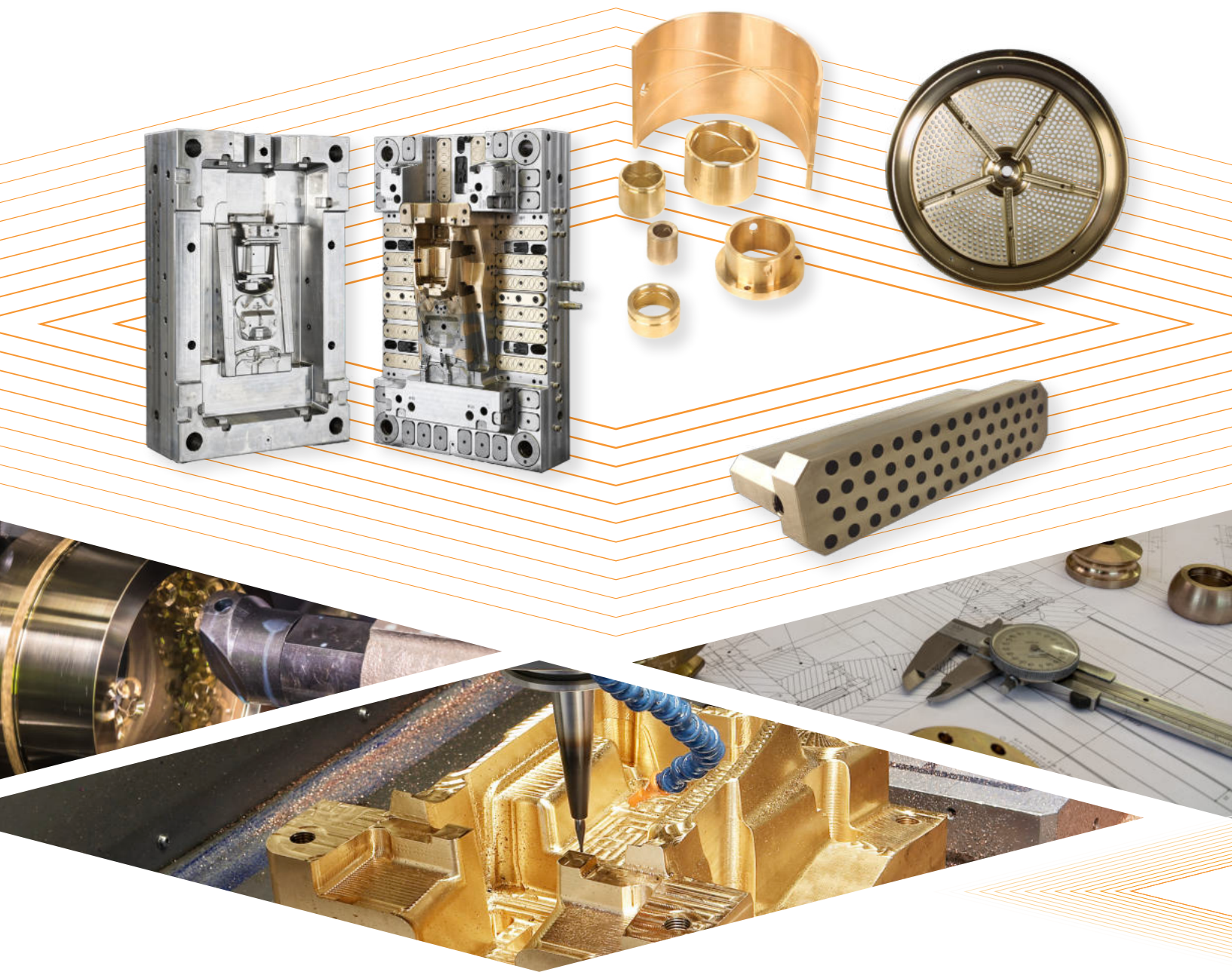




WWW.AMPCOMETAL.COM

MACHINING SOLUTIONS

PRECISION ENGINEERING FOR DEMANDING APPLICATIONS



Excellence in Engineered **Alloys**

INTRODUCTION

AMPCO METAL is a leader in precision machining solutions for industries worldwide. Our expertise in machining high-performance **AMPCO®** and **AMPCOLOY®** alloys allowing us to offer our customers a seamless, high-quality solution tailored to their specific applications.

With a global network of six specialized machining centers and a commitment to quality, we deliver fully machined components that enhance operational efficiency, reduce downtime, and optimize performance.

As a vertically integrated manufacturer, we offer:

- ◆ In-house alloy production for consistent quality
- ◆ Advanced CNC machining for tight tolerances
- ◆ Rapid delivery and expert technical support

With AMPCO METAL, you get more than materials, you gain a trusted partner for advanced manufacturing solutions.

VALUE-ADDED SERVICES

At AMPCO METAL, we go beyond machining, we provide comprehensive manufacturing solutions to help our customers maximize efficiency and quality.

- ◆ **Prototyping & Consulting**
Expert advice for custom applications.
- ◆ **Custom Machining & Precision Engineering**
CNC milling, turning, and EDM for complex geometries.
- ◆ **Global Technical Support & Rapid Delivery**
6 machining centers ensure fast turnaround times.
- ◆ **Quality Assurance**
Stringent quality control and inspection.

Technical Capabilities

- ◆ Global Machining Facilities: Germany, France, India, China, Brazil, USA
- ◆ CNC milling (3-5 axis), CNC turning, grinding, EDM, wire-cutting
- ◆ Precision Tolerance
- ◆ Custom dimensions per customer specifications
- ◆ Strict compliance with international machining standards
- ◆ Quality Control & Certifications
- ◆ ISO-certified machining facilities
- ◆ Advanced metrology & 3D coordinate measuring systems

Why Choose AMPCO METAL?

- ◆ Consistent quality worldwide
- ◆ High-performance alloys for wear resistance, conductivity & corrosion resistance
- ◆ Fast lead times & responsive customer support
- ◆ Customized solutions tailored to industry needs



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APPLICATION HIGHLIGHTS

WEAR RESISTANCE

AMPCO METAL's wear-resistant AMPCO® aluminum bronzes provide unmatched durability for bushings, bearings, wear plates, and sliding components. These alloys reduce friction and withstand high loads and impacts, ensuring extended service life.

Key Components

- ◆ Bushings & Bearings
- ◆ Wear Plates & Liners
- ◆ Sliding Components



CORROSION RESISTANCE

Our corrosion-resistant AMPCO® alloys offer superior protection against oxidation, chemical exposure, and extreme environments. These materials extend equipment lifespan in marine, oil & gas, chemical processing & hydrogen industries.

Key Components

- ◆ Marine Shaft Bearings
- ◆ Chemical Processing Components



TUBE BENDING

Our aluminum bronze alloys are engineered for precision tube bending applications. These alloys provide exceptional wear resistance, anti-galling properties, and enhanced sliding properties, ensuring smooth, defect-free bends while reducing tool wear.

In combination with our steel bending tool sets, even complex bending geometries can be achieved with precision and reliability.

Key Components

- ◆ Flexible Ball Mandrels
- ◆ Wiper Dies
- ◆ Steel bending tool sets
- ◆ End Forming Punches



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TUBE FORMING

AMPCO® aluminum bronze alloys offer exceptional wear resistance, anti-galling properties, and extended tool life for tube forming operations such as forming rolls, welding rolls & welding shoes.

Key Components

- Forming Rolls
- Welding Rolls
- Welding Shoes
- Sizing Rolls



DEEP DRAWING

Our alloys provide exceptional wear resistance, anti-galling properties, and reduced friction, making them ideal for deep drawing applications. Ensure longer tool life, reduced surface defects, and consistent forming results, even in the most demanding production environments.

Key Components

- Drawing Dies & Rings
- Punches
- Blank Holders

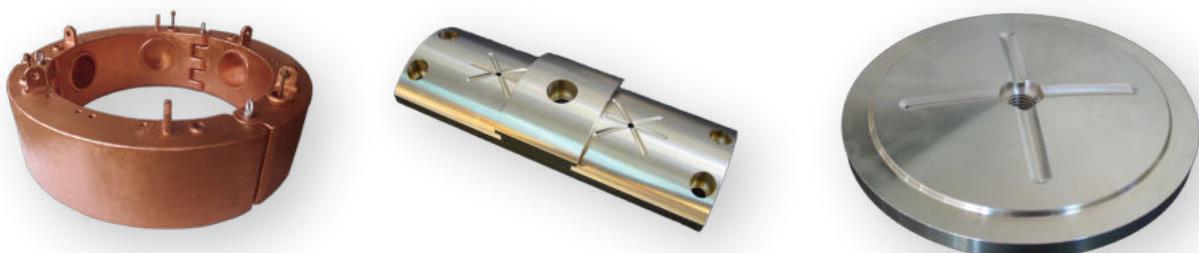


STEEL INDUSTRY SOLUTIONS

AMPCO METAL provides high-performance copper-based alloys that improve efficiency in hot & cold rolling mills, blast furnaces, arc furnaces and continuous casting operations. Our materials resist high temperatures, extreme pressure, and aggressive environments.

Key Components

- Hot & Cold Rolling Mills: Work roll chocks, spindle slipper pads, and pressure plates
- Blast & Electric Arc Furnaces: Arc furnace electrode holders, tuyeres, oxygen lance holders, cooling plates, and continuous casting permanent molds
- Mandrel Components: Wedges, bushings, and pressure plates



PLASTIC INJECTION & MOLD MAKING

Our AMPCOLOY® high-performance alloys optimize mold performance by enhancing heat transfer, reducing cycle times, and increasing mold longevity.



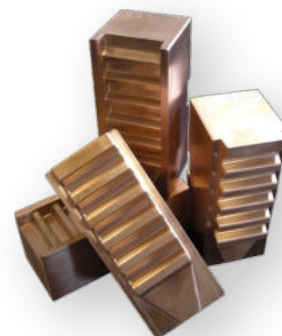
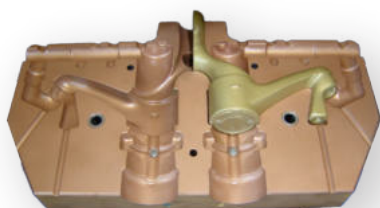
Key Components

- Core Pins & Inserts
- Mold Cavities & Cores
- Sprue Bushings & Nozzle Tips
- Ejector Sleeves & Pins



DIE CASTING

AMPCOLOY® alloys provide high thermal conductivity and wear resistance, ensuring faster cycle times, reduced defects, and extended tool life in die casting applications.



Key Components

- High-Pressure Die Casting Pistons
- Piston-Adapter Systems
- Gravity die casting molds
- Venting Blocks

RESISTANCE WELDING

AMPCOLOY® alloys enhance resistance welding performance, ensuring higher weld quality, extended electrode lifespan, and reduced wear.



Key Components

- Welding Electrodes
- Backup Electrodes & Holders
- Seam Welding Wheels



Nearest International Standards					
AMPCO Reference	ISO	EN	DIN	ASTM	AMS
AMPCO® 8					
AMPCO® 18					
AMPCO® 18.23					
AMPCO® 21					
AMPCO® 22	AMPCO METAL Specification				
AMPCO® 25					
AMPCO® 26					
AMPCO® 45					4640 4880
AMPCO® M4					4590 4881

Nominal Chemical Composition (Remainder Cu)							Mechanical & Physical Properties								Usage Guideline		
Sn	Zn	Pb	Al	Fe	Ni	Mn	D g/cm³	Rm MPa	Rp0.2 MPa	As %	HBW 10/3000	Thermal Conductivity W/m·K	Coefficient of Expansion 10⁻⁶/K	Coefficient of Friction Unlubricated	Need for Lubrication	Average Speed m/s	Average Load MPa
0.25			6.5	2.5			7.95	586	386	35	187	54	16.3	0.17	Moderate ●	1.5	85
			10.5	3.5			7.45	708	361	13	194	63	16.2	0.18	Moderate ●	1.5	100
			10.5	3.5			7.45	758	386	16	207	59	16.2	0.18	Moderate ●	1.5	100
			13.1	4.4		2	7.20	735	407	1	286	42	16.2	0.21	Moderate ●	0.7	115
			14.1	4.7		2	7.06	724	427	0.5	332	42	16.2	0.25	Moderate ●	0.6	120
Proprietary							6.93	R _{mc} 1579	R _{p0.1} 706	0.2	375	33	16.2	0.30	Moderate ●	0.5	125
							6.84	R _{mc} 1608	R _{p0.1} 715	0	420	33	16	0.32	Moderate ●	0.4	130
			10	2.5	5	1.5	7.53	814	517	15	228	46	16.2	0.23	High ●	1.5	90
			10.5	4.8	5	1.5	7.45	1000	793	8	286	42	16	0.23	Moderate ●	1	330



Nearest International Standards					
AMPCO Reference	ISO	EN	DIN	ASTM	AMS
AMPCOLOY® 83	CuBe2	CW 101C	2.1247	C17200	
AMPCOLOY® 944 Beryllium free	AMPCO METAL Specification				
AMPCOLOY® 940 Beryllium free					
AMPCOLOY® 88	CuCoNiBe	CW 104C	~ 2.1285	~ C17510	
AMPCOLOY® 95	CuCoNiBe	CW 103C	~ 2.1285	~ C17510	
AMPCOLOY® 972 Beryllium free	CuCrZr	CW 106C	2.1293	C18150	

Cr	Be	Zr	Si	Co	Ni	Mn	D g/cm³	Rm MPa	Rp0.2 MPa	Aₛ %	HBW 10/3000	Thermal Conductivity W/m·K			Electrical Conductivity % IACS	RWMA Class
												20°C	100°C	200°C		
	1.9			Co+Ni: 0.5			8.26	1250	1000	4	380	106	130	145	22%	4
1			2		7		8.69	938	730	5	294	156	170	190	30%	4
0.4			0.7		2.5		8.71	689	517	13	210	208	226	243	48%	3
	0.5			Co+Ni: 2.5			8.75	890	680	14	270	230	251	272	48%	3
	0.5			Co+Ni: 2			8.75	850	600	15	240	220	235	254	52%	3
1		0.1					8.90	520	466	20	152	320	350	367	86%	2

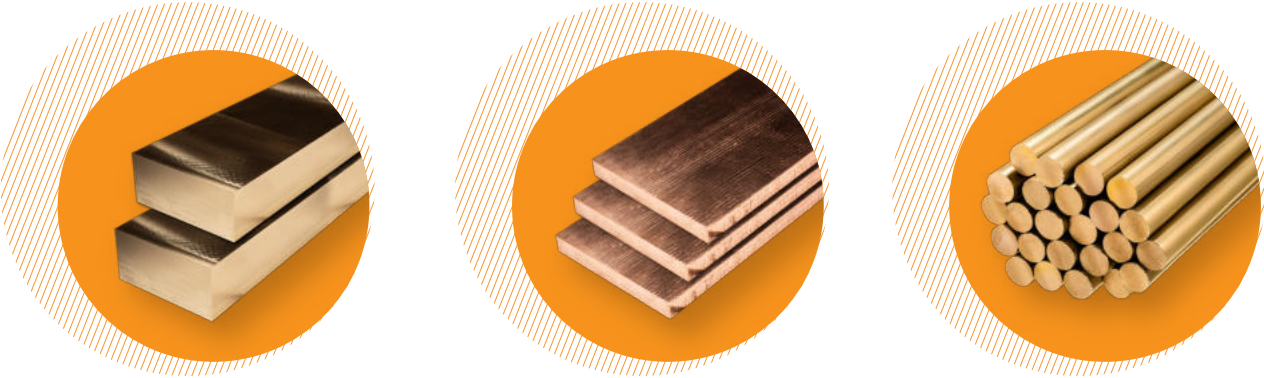
*Please ask us about your other copper alloy requirements.

**The above are nominal values. If specific minimum figures are required, please contact your local AMPCO METAL representative.



PRODUCT SELECTION TOOL

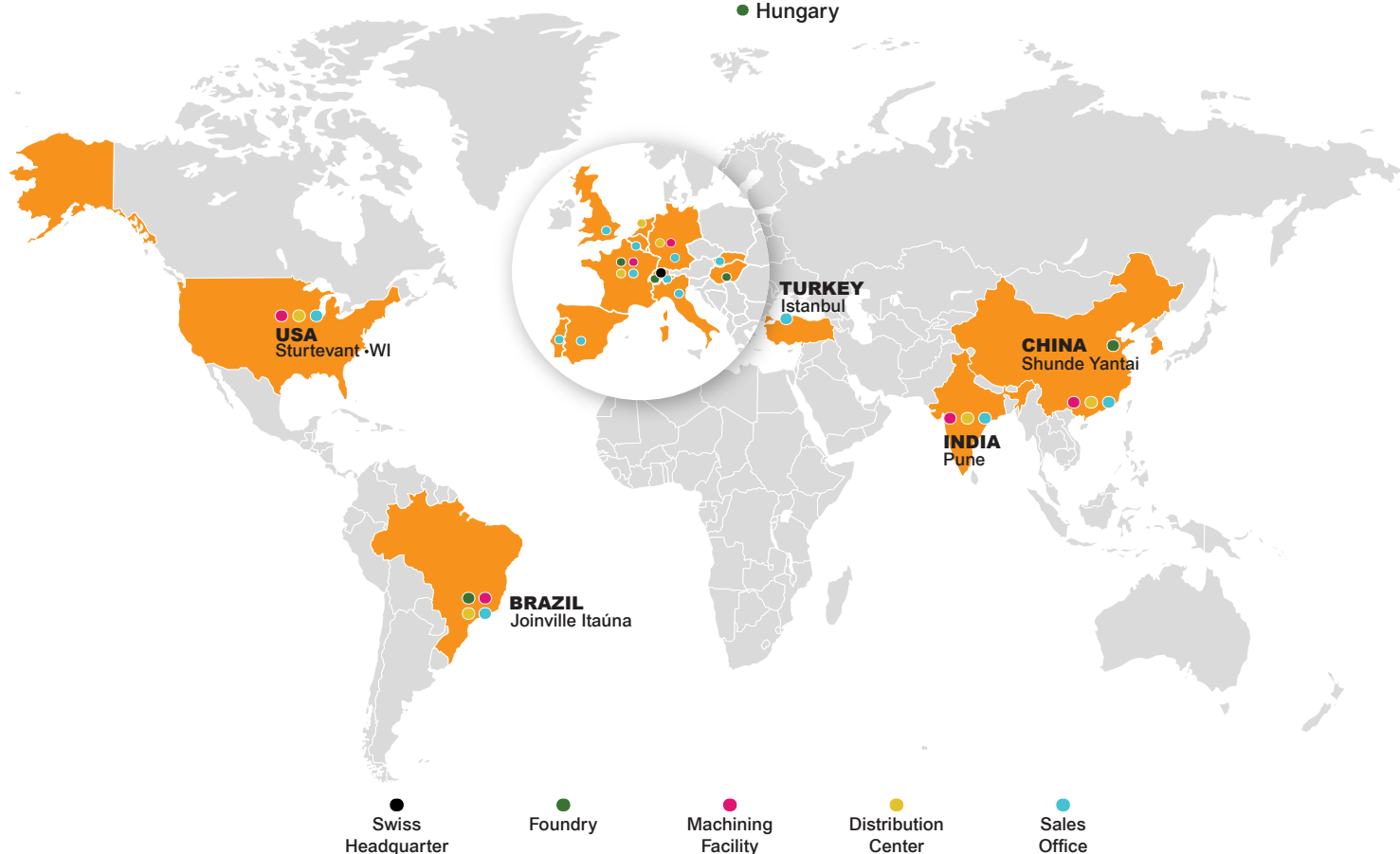
The product selection tool is an app that allows you to find the best alloy for your application based on key parameters such as mechanical properties, physical properties, industries or end-use applications. You can compare several alloys and request our technical expert's assistance.





Excellence in Engineered **Alloys**

- UK
- Benelux
- Portugal
- Netherlands
- Austria
- Switzerland HQ
- France
- Germany
- Italy
- Spain
- Slovakia
- Hungary



HEADQUARTERS

AMPCO METAL S.A.

SWITZERLAND

Route de Chésalles 48

P.O. Box 45

1723 Marly

T/ +41 26 439 9300

E/ info@ampcometal.com

FIND YOUR LOCATION

