

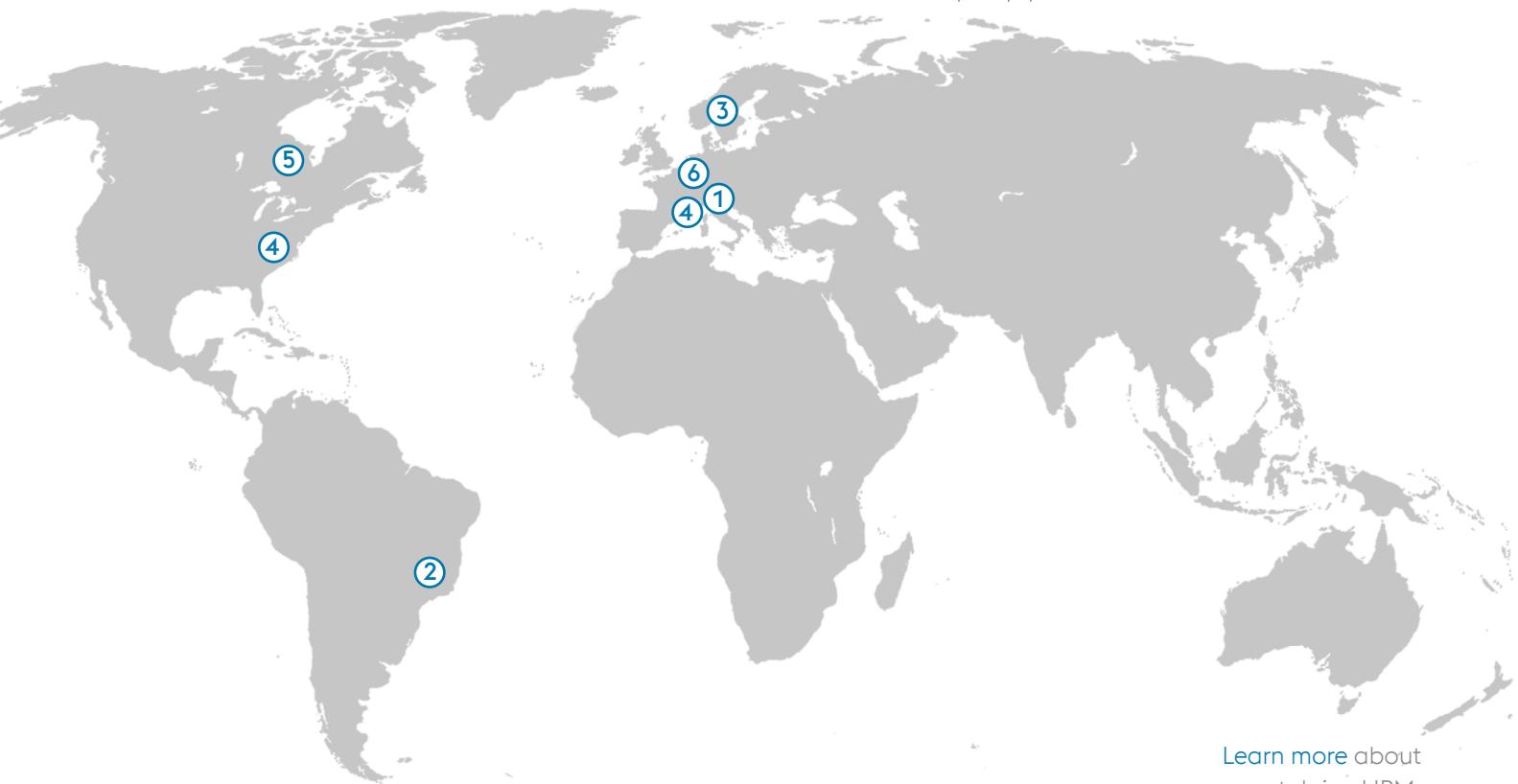


RACING

Materials for High Performance

voestalpine High Performance Metals GmbH
www.voestalpine.com/hpm/mobility/racing

voestalpine
ONE STEP AHEAD.



Learn more about
voestalpine HPM:



OUR COMPANY GLOBAL AVAILABILITY

At voestalpine High Performance Metals, we deliver premium steel and non-ferrous alloys from a unified global network. With multiple production sites and over 130 sales and service locations worldwide, we ensure consistent quality and customer satisfaction across every product, service, and delivery.

- 1 **voestalpine Böhler Edelstahl – Kapfenberg, Austria:** One of the world's leading suppliers of high-speed steels, tool steels & specialty material.
- 2 **Villares Metals Brazil – Sumaré, Brazil:** Specializes in steel and specialty alloys that combine reliability, strength and customization.
- 3 **Uddeholm – Hagfors, Sweden:** Is one of the world's leading producers of tool steels for industrial applications, with over 300 years of metallurgical expertise.
- 4 **voestalpine HPM Switzerland – Pieterlen, Switzerland & voestalpine HPM USA- South Boston, Virginia:** They specialize in drawing and grinding services along with the rolling of special profiles.
- 5 **voestalpine HPM Canada – Toronto, Canada:** Focuses on designing and manufacturing custom 3D printed components.
- 6 **voestalpine eifeler Coating – Dusseldorf, Germany:** Develops and offers PVD and CVD coatings and runs service centers all over the world.

RACING APPLICATIONS

CRANKSHAFTS

With optimized steel grades and tailored treatments, we ensure maximum strength and fatigue resistance under racing conditions.



GEARS

Our ultra-clean, high-strength steels and heat-treatment expertise help gear producers deliver lightweight, durable solutions for maximum power transfer.



EXHAUST SYSTEM

Our high-performance steels and metallurgical know-how ensure exhaust components achieve superior heat resistance and durability.



VALVES

Our specialized steels and services help achieve outstanding thermal stability, strength, and wear resistance for high-performance engines.



CAMSHAFTS

With our premium steels and precision services, we enable camshaft manufacturers to achieve exceptional strength and wear resistance for racing performance.



FASTENERS

Through advanced materials and controlled processes, we support fastener makers in meeting extreme fatigue and corrosion resistance requirements.



DRIVESHAFTS

We provide steels and technical expertise that empower driveshafts to deliver uncompromising torque capacity and fatigue strength.



MATERION ALLOYS AND COMPOSITES

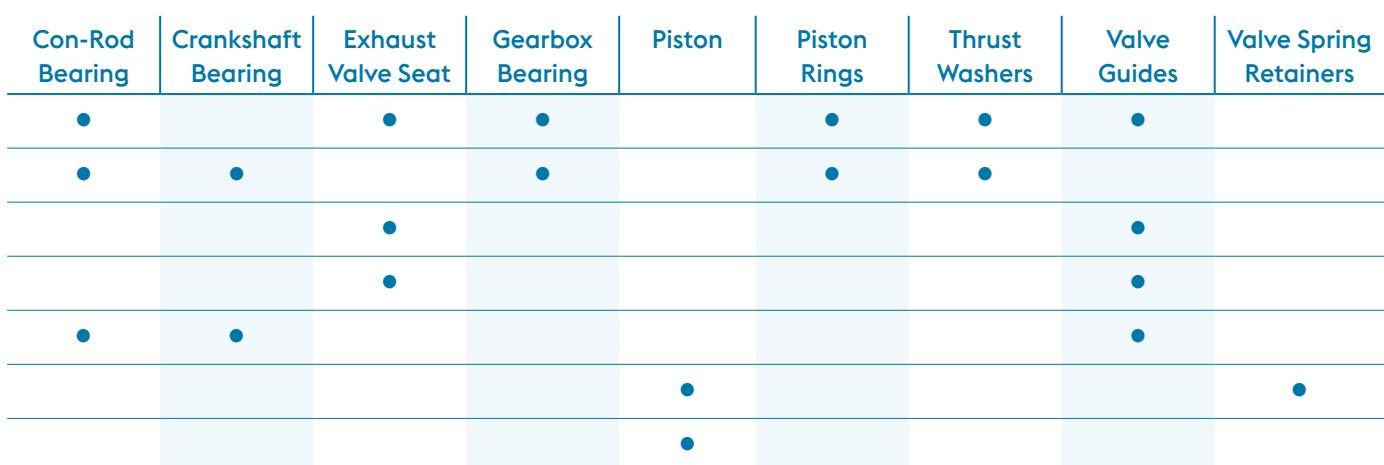
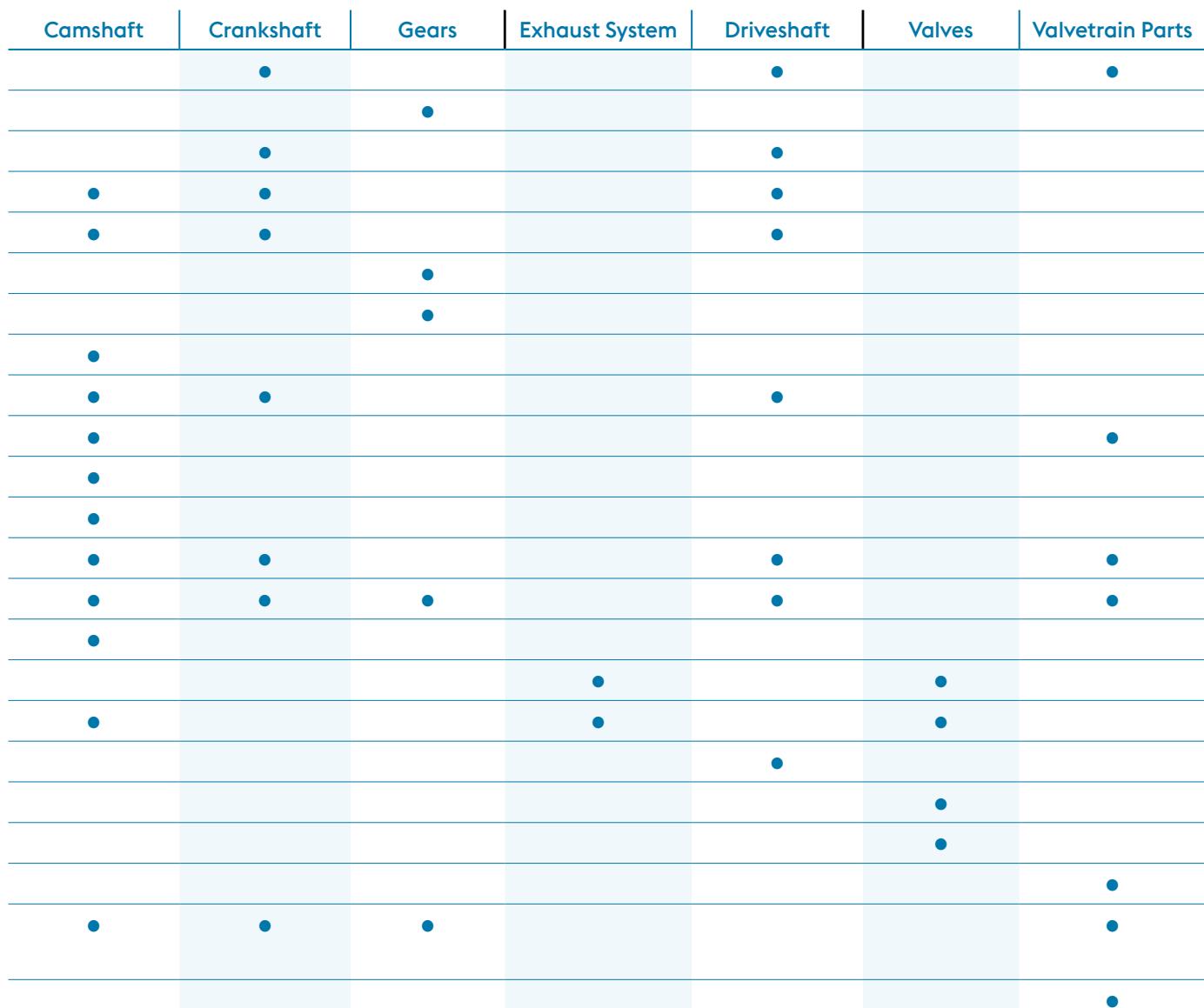
We offer copper- and aluminum-based materials from our partner, Materion, for heat management and lightweighting. Only available in North America.



OUR PRODUCTS

voestalpine Solution	Commercial Grade	Category	Melt	Fasteners
V132	300M	Alloy Steel	EAF / VAR	●
V135	35NCD16	Alloy Steel	EAF / VAR	
V180	300M SI	Alloy Steel	VIM / VAR	●
V358	E40CDV12	Alloy Steel	EAF / VAR	●
V361	E32CDV13	Alloy Steel	VIM / VAR	●
E108	S156	Case Hardening	Air Melt	
M121	1.5752	Case Hardening	EAF / PESR	
K305	1.2363	Cold Work	Air Melt	
K600	1.2767	Cold Work / PM Steel	Air Melt	●
K888	Patented	Cold Work / PM Steel	PM	
S390	T15 mod	Cold Work / PM Steel	PM	
S690 / S693	PM M4	Cold Work / PM Steel	PM	
W360	H13 mod	Hot Work Tool Steel	EAF / VAR	●
W460	H13 mod	Hot Work Tool Steel	VIM / VAR	●
R250	M50	High Speed Tool Steel		
L625	Alloy 625	Ni-Based Alloy	VIM / VAR	
L718	Alloy 718	Ni-Based Alloy	VIM / VAR	
V720 VMR	1.6358	Hot Work Tool Steel	Air Melt / VIM / VAR	
VAT751A	Alloy 751	Ni-Based Alloy	VIM / VAR	
VVN80A	Nimonic 80 A	Ni-Based Alloy	VIM / VAR	
Vancron SuperClean	AISI 304 mod	Cold Work	PM	
Vanadis 4 Extra SuperClean	AISI D2 mod	Cold Work	PM	
Caldie	AISI D2 mod	Cold Work	ESR	

Cu-/Al-Based	Commercial Grade	Category	Processing	Combustion Prechamber	Con-Rod
PerforMet	N/A	CuNiSiCr	Hot Worked	●	
ToughMet	C72900	CuNiSn	Hot Worked		
Alloy 10X	C17500 + Zr	CuBe	Cold Drawn	●	
Alloy 3	C17510	CuBe	Cold Drawn	●	
Alloy 25	C17200	CuBe	Cold Drawn		
SupremEX 225CA	N/A	Al-SiC MMC	PM		●
AyontEX4632	N/A	Al Hypereutectic	PM		



EIFELER RACING COATINGS

EIFELER PVD COATINGS

In racing, every millisecond counts. voestalpine eifeler Coating delivers advanced surface technologies that help motorsport teams achieve higher top speeds, reduced friction, and exceptional wear resistance—ensuring reliability under extreme conditions.

Our coatings are engineered for critical engine components, including camshafts, connecting rods, piston rings, valves, tappets, and fuel system parts. By minimizing friction and protecting against wear, they extend component life and optimize performance.

KEY SOLUTIONS FOR RACING APPLICATIONS:

- » CARBON-X® – Ultra-hard, low-friction coating for cam lobes, piston rings, and tappets.
- » CHROME-X® – Superior wear protection for valve tips, shafts, and connecting rods.
- » TOPMATIC® – Prevents hydrocarbon build-up on valve seats for consistent operation.
- » WC/C – Enhances durability of tappets and wrist pins under high loads.

PROVEN BENEFITS

- » Significant reduction in component wear
- » Increased reliability over multiple races
- » Enhanced efficiency for both gasoline and diesel engines

voestalpine Solution	Characteristics				
	Coating	Hardness (HV)	Coating Thickness (µm)	Coefficient of Friction	Coating Properties
CARBON-X ®	2,400 ±400	1.5 – 2.5	0.05 – 0.15	a-C:H	Dark Grey
CHROME-X®	1,400 – 2,200	1 – 3	≤0.8	a-C:H	Shiny Metallic
TOPMATIC®	2,800 ±300	5 – 10	0.6	a-C:Me	Eggplant-Colored
WCC	1,400 ±200	2 – 6	0.5	a-C:H:Me	Graphite Grey

ADDITIVE MANUFACTURING

SHAPING THE FUTURE IN METAL

Additive Manufacturing (AM) encompasses a diverse set of advanced technologies that build components layer by layer, directly from digital models. Unlike traditional subtractive manufacturing methods, AM enables the creation of highly complex geometries with minimal material waste. This layer-wise approach opens up new possibilities for engineers and designers, allowing them to produce near-net-shape parts that would be extremely difficult, time-consuming, or cost-prohibitive to fabricate using conventional techniques.

- » AMPO® Metal Powders from BÖHLER
- » Design/Engineering/Simulation
- » Serial and prototype part Manufacturing
- » Heat treatment, coatings and machining
- » Complete AM Solutions

ADDITIVE BUILD AND POST PROCESSING

We offer a variety of build technologies such as direct metal laser sintering and direct metal deposition. Capability to print a variety of steels and super alloys, from producing single prototypes to serial production. Post processing capabilities such as machining, grinding, polishing, heat treatment as well as coatings.

DESIGN, ENGINEERING, SIMULATION

Design expertise in multiple industries such as Die Casting, Injection Molding, Oil and Gas, Aerospace, and Automotive; as an example: conformal cooling applications. Capability to run various simulations such as FEA, CFD, heat transfer, plastic molding, metal forming, metal casting, metal extrusion, topology .

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voestalpine High Performance Metals LLC

2505 Millenium Drive

Elgin, IL 60124

T. +1 (630) 587-1220

E. mobility@voestalpine.com

www.voestalpine.com/hpm/mobility

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