



MOBILITY

voestalpine MATERIALS VALVES

WHEN PERFORMANCE MATTERS

High-performance engine valves are critical components controlling the intake of air-fuel mixture and the exhaust of combustion gases. They operate under extreme conditions, including high temperatures, pressure, corrosion, and mechanical stress.

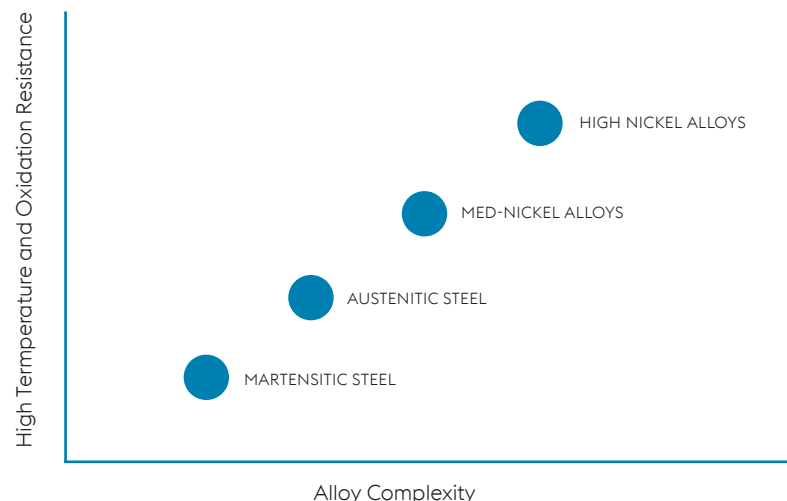
To ensure efficiency, reliability, and durability, material performance is key. voestalpine High Performance Metals provides premium valve steels and nickel-based alloys engineered to withstand these demanding environments and ensure consistent engine performance.

Modern engines require valve materials that can perform reliably under increasingly demanding conditions.

MATERIAL FAILURE & OUR SOLUTION

Material Related Failure	voestalpine Solution	Performance Benefit
High Temperature Degredation & Oxidation	Heat- and oxidation-resistant alloys	Austenitic & nickel-based alloys (e.g. VAT grades)
Corrosion From Exhaust Gases	High corrosion resistance through alloy design	High nickel alloys (VAT31V, VAT751, VAT80A)
Abrasive Wear & Mechanical Stress	Optimized hardness and wear resistance	Martensitic valve steels (VV grades)
Fatigue and Cyclic Loading	High purity and fatigue strength	Advanced alloy concepts + controlled melting processes

PRODUCT PORTFOLIO



COMPARISON OF VALVE STEELS

voestalpine Grade	Commercial Grade	Valve Application
Martenistic Steels		
VV40	SUH3	Passenger cars
VV45	Sil 1; HNV3; SUH1; 1.4718	Passenger cars
VV48	SUH11/; UH11M	Passenger cars
VV85	Chromo 193; X85CrMoV18-2; 1.4748	Agriculture/machinery
Austenitic Steels		
VV33	21-8N; 23-8N; X33CrNiMnN23-8; 1.4866	Passenger cars
VV50	21-4N+Nb+W; 21-43; 21-43N; X50CrMn-NiNbN21-9; 1.4882	Passenger cars, two-wheelers
VV53	21-4N; SUH35; X53CrMnNiN219; 1.4871	Passenger cars, racing cars
VV56	21-2N; EV-12	Passenger cars, racing cars
Intermediate Nickel Alloys		
VAT30A	HRV30; Ni30; NIREVA3015; UNS S66315	Trucks/buses, passenger cars, two-wheelers
VAT36	VAT36; Ni36	Passenger cars, power generators
High Nickel Alloys		
VAT31V	SAE HEV8; UNS N07032; Pyromet 31V	Agriculture/machinery, power generators
VAT751	Alloy 751; X751; NiCr15Fe7TiAl	Trains, trucks/buses, passenger cars, power generators
VAT80A	Alloy 80A; NiCr20TiAl; Nimonic 80A	Ships, trucks/buses, passenger cars, power generators, racing cars

voestalpine High Performance Metals GmbH

Donau-City-Strasse 7

1220 Vienna

T. +43 50304 10 0

E. mobility@voestalpine.com

www.voestalpine.com/hpm/mobility/valves

voestalpine

ONE STEP AHEAD.