

ENGINEERING STEELS - HEAT TREATABLE AND NITRIDING STEELS

Application Segments

Automotive

Available Product Variants

Long Products

Product Description

BÖHLER V180 VMR is a high-quality, low-alloy Ni-Cr-Mo-V steel with a high silicon and vanadium content, available in bars and forgings for components with a nominal cross-sectional thickness of up to 3.5 inches (89 mm) that require the highest strength and toughness values, especially for large cross-sections in the quenched and tempered condition.

This steel is typically used for parts that require a through-hardening steel with a minimum hardness of 53 HRC and can be used to produce finished parts that must meet the most stringent testing standards.

Due to the higher Si and V content of BÖHLER V180 VMR, this high-strength steel offers improved mechanical and fatigue properties compared to the standard 300M grade and is used for mechanically highly stressed parts with high fatigue loads, such as torsion bars, gears, and transmission shafts, primarily in racing and automotive engineering, but also in mechanical engineering. The dual vacuum melting process, using vacuum induction melting (VIM) and subsequent vacuum arc remelting (VAR), ensures a high degree of purity and homogeneity and also enhances the fatigue properties of the manufactured parts.

Process Melting

VIM + VAR

Applications

> Motorsport industry

> Civil and mechanical engineering

Technical data

| Material designation | Standards |
|----------------------|-----------|
| K54015 UNS | 6499 AMS |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Mo | Ni | V |
|--------------|--------------|--------------|------------|------------|--------------|--------------|--------------|--------------|
| 0.37 to 0.44 | 2.60 to 2.85 | 0.50 to 0.95 | max. 0.015 | max. 0.010 | 0.65 to 1.05 | 0.30 to 0.55 | 1.50 to 2.10 | 0.10 to 0.30 |

Refers to AMS 6499

Delivery condition

Normalized, Tempered

Hardness (HB) | max. 311

Round Bars and Wire Rod (if any)

| | | Diameter mm | |
|---------------|---|----------------|--|
| ROLLED | | | |
| 12.50 | - | 140.00 | |
| FORGED | | | |
| 140.01 | - | 170.00 | |

More information regarding MOQ, lengths and tolerances upon request.

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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