

# ENGINEERING STEELS - HEAT TREATABLE AND NITRIDING STEELS

## Application Segments

- Aerospace
- Automotive

## Available Product Variants

- Long Products\*
- Semi-Finished Products / Billet
- Open Die Forgings

\* Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

## Product Description

BÖHLER V361 is a 3% Cr-Mo-V nitriding low-alloy steel of premium aircraft-quality, low-alloy steel offering a tensile strength of up to over 1350MPa in the form of bars, forgings, and forging stock. Due to the optimized production route via VIM-melting and VAR-remelting, the steel offers high impact strength and fatigue limit. It may be nitrided in the heat treated condition to obtain a wear resistant surface.

It is used typically for nitrided parts such as bearings, operating under heavy loads and high speeds at moderate temperatures, and requiring highest surface hardness, high core toughness, and less distortion than parts made from case hardening steel, but usage is not limited to such applications.

## Process Melting

- VIM + VAR

## Applications

- > Bearings
- > Other Aerospace Components
- > Structural parts (Aerospace)
- > Turbine and Engine Parts (Aerospace)
- > Automotive
- > Motorsport industry
- > Aerospace

## Technical data

Material designation		Standards	
E32CDV13	Market grade	6481	AMS
1.7765	SEL		
32CrMoV12-10	EN		

### Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Cu
0.29 to 0.36	0.10 to 0.40	0.40 to 0.70	max. 0.015	max. 0.005	2.80 to 3.30	0.70 to 1.20	max. 0.30	0.15 to 0.35	max. 0.10

Related to AMS 6481

### Delivery condition

#### Annealed

Tensile Strength (MPa)	max. 862   max 12.7 mm diameter, cold finished
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#### Annealed

Hardness (HB)	max. 255   above 12.7 mm diameter, hot finished
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#### Annealed

Hardness (HB)	max. 269   above 12.7 mm diameter, cold finished
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### Round Bars and Wire Rod (if any)

Diameter mm			MOQ ex mill kg	Length m			Tolerance
<b>ROLLED</b>							
12.50	-	55.00	1,250	3.00	-	4.00	IT h/k 11
55.01	-	120.00	2,500	3.00	-	4.00	IT h/k 11
120.01	-	140.00	2,500	3.00	-	5.00	IT h/k 14
<b>FORGED</b>							
140.01	-	203.20	2,200	3.00	-	5.00	IT h/k 14

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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ONE STEP AHEAD.