



Material No.: Code:  
**1.2767 45NiCrMo16**

DE - Brand:  
**VNC4**

**Chemical composition:**  
(Typical analysis in %)

C	Cr	Mo	Ni				
0,45	1,40	0,25	4,00				

**Steel properties:**

Nickel alloyed cold work tool steel, good through-hardening, good polishability, excellent toughness.

**Applications:**

shredder knives, cutting tools for thick materials, casing, plastic moulds, cutting and bending tools, shear knives for cutting scrap and billets.

**Condition of delivery:**

Soft annealed to max. 285 HB

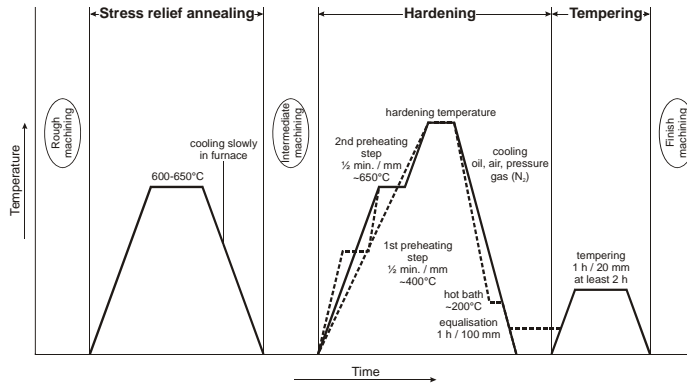
**Physical properties:**

Thermal expansion coefficient	$\left[ \frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	20-100°C	20-200°C	20-300°C	20-400°C
		11,5	12,3	12,8	13,1
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	150°C	300°C	
		32,9	34,6	35,1	

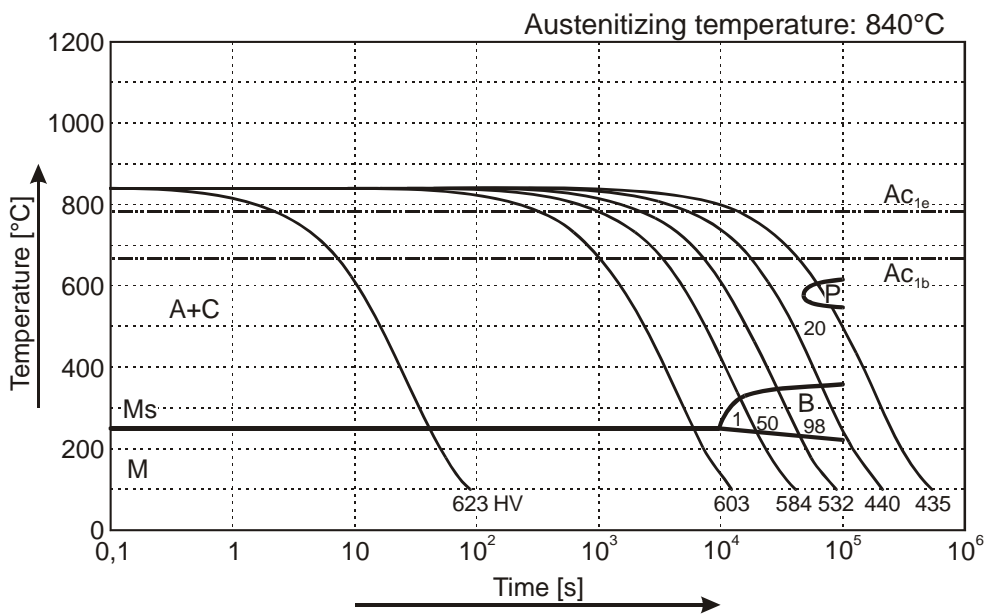
**Heat treatment:**

Soft annealing	<b>Temperature</b>	<b>Cooling</b>	<b>Hardness</b>
	610 - 650°C	furnace	max. 285 HB
Stress relief annealing	<b>Temperature</b>	<b>Cooling</b>	
	600 - 650°C	furnace	
Hardening	<b>Temperature</b>	<b>Cooling</b>	<b>Tempering</b>
	840 - 870°C	oil, pressure gas (N <sub>2</sub> ), air or hot bath 180 - 220°C	see tempering diagram

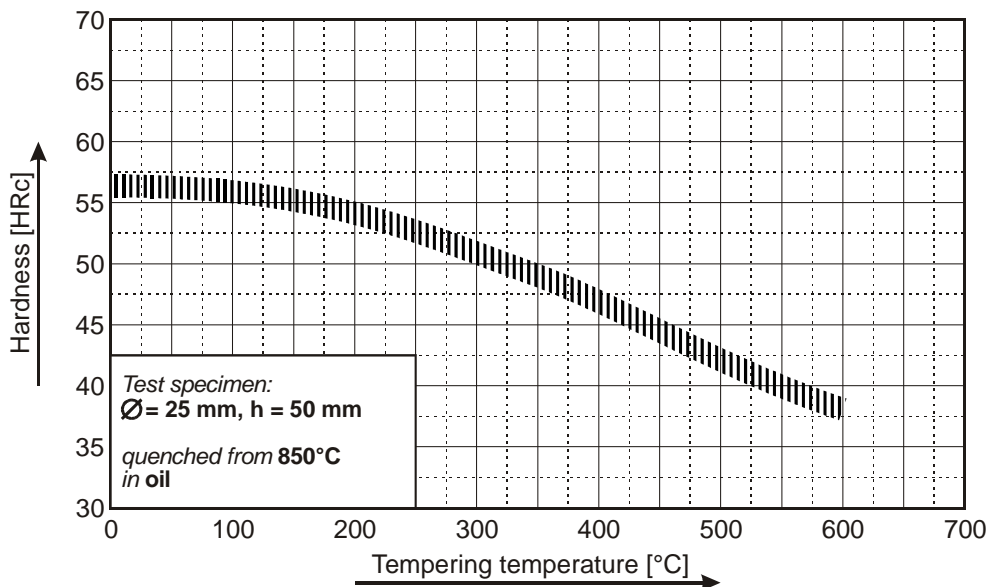
## (1.2767) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.