AKM TOOL AND HIGH-SPEED STEELS

Dörrenberg Edelstahl

DE - Brand:

Special Steel

WP7V

Chemical composition

(Typical analysis in %)

C	Cr	Mo	V				
0,50	7,80	1,50	1,50				

Steel properties

Cr-Mo-V alloyed special steel, secondary hardenable, very high toughness, good compressive strength, high wear resistance also at high temperature.

Applications

High wear loaded dies with flat impressions, hot and cold shear knives, knives for cutting sheet >7mm, highly stressed punches, profiling rolls, tools for hot stamping of automotive body parts, hot forming of sheet metals.

Condition of delivery

Soft annealed to max. 250 HB

Physical properties

Thermal expansion coefficient

$\left[\frac{10^{-6}\cdot m}{m \cdot K}\right]$	20-100°C	20-200°C	20-300°C	20-400°C
	10,5	10,7	11,3	11,6

Thermal conductivity

$\left[\frac{W}{m \cdot K}\right]$	20°C	350°C	700°C
	26,4	27,8	30,6

Heat treatment

Soft annealing

Temperature	Cooling	Hardness
820 - 850°C	furnace	max. 250 HB

Stress relief annealing

Temperature	Cooling	
600 - 650°C	furnace	

Hardening

Temperature	Cooling	Tempering
1050 - 1090°C	oil, pressure gas (N_2), air or hot bath 500 - 550°C	see tempering diagram

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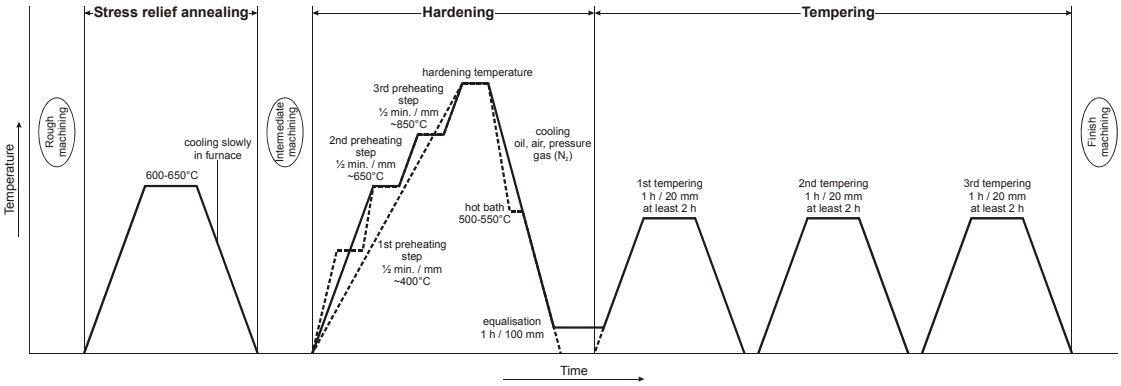
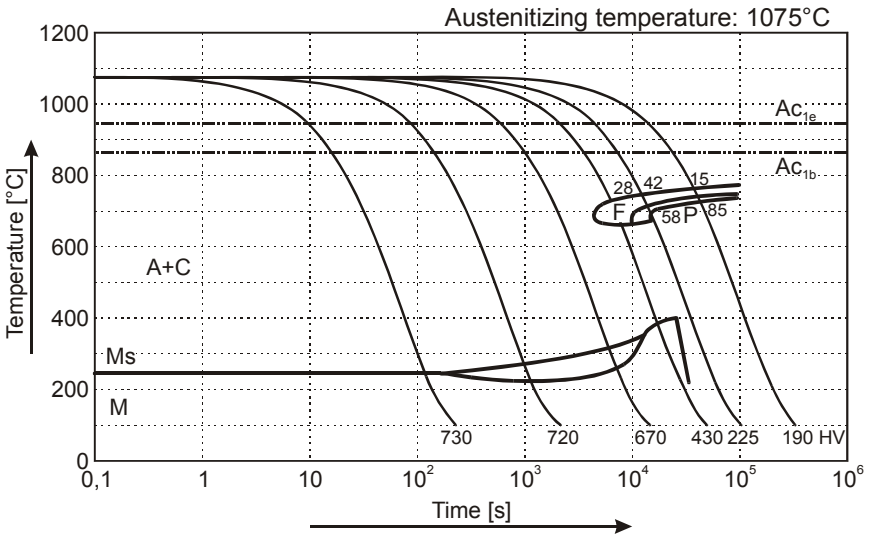
09/20

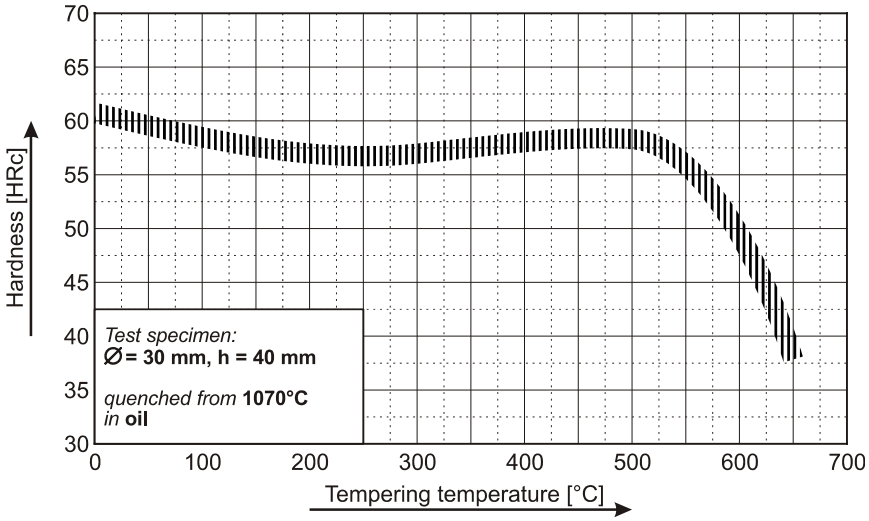
(WP7V) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.