Special Steel

DE - Brand:
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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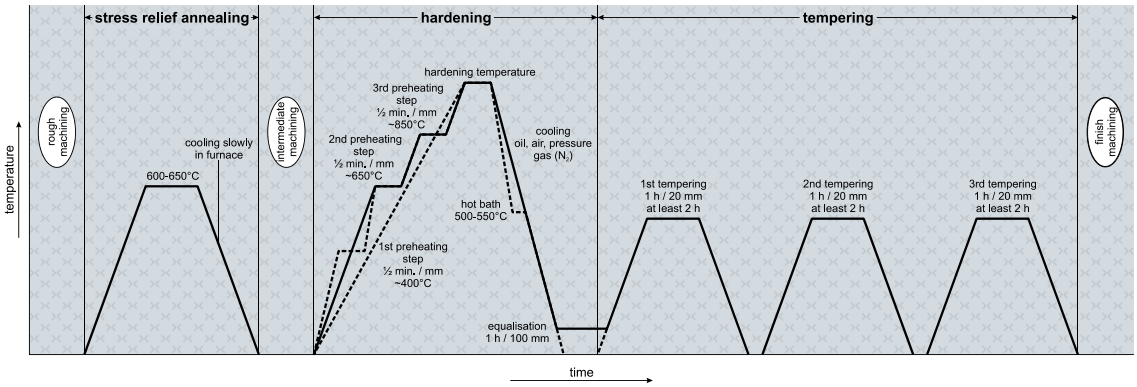
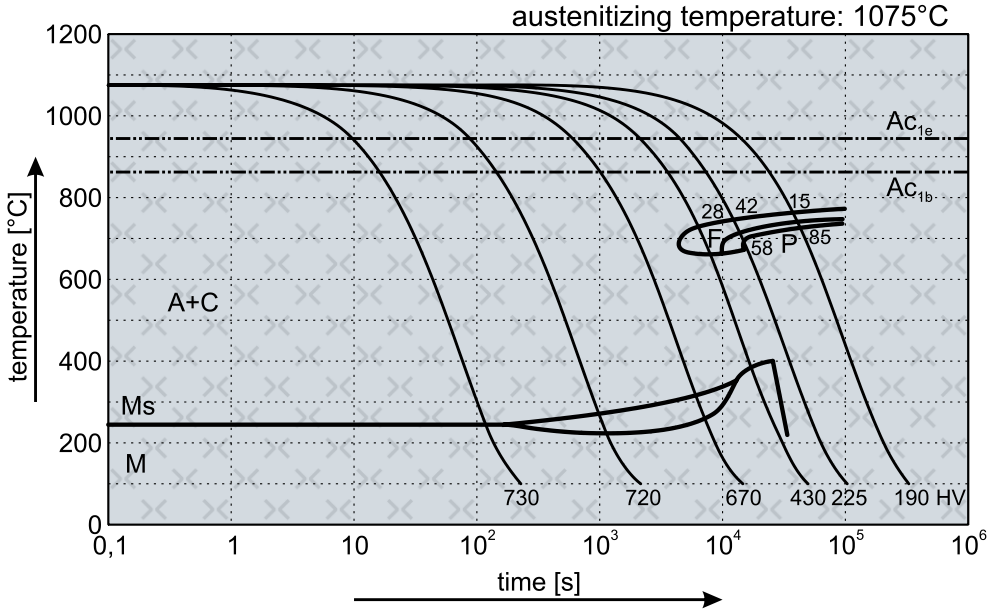
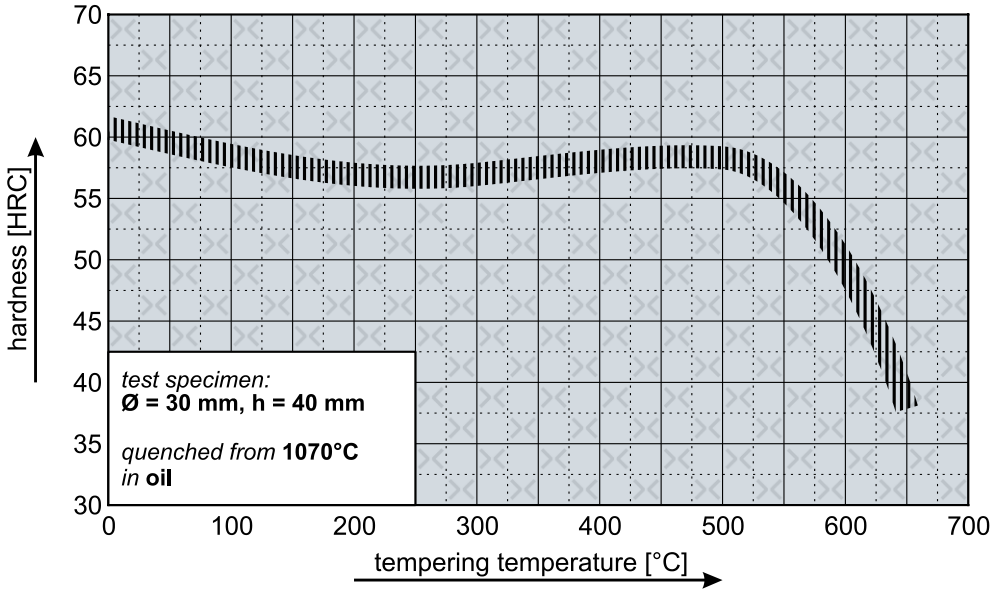
(WP7V) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.