

DE - Brand:

## Special Steel

## WP7V

### Chemical composition:

(Typical analysis in %)

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

### Steel properties:

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

### Applications:

Tools for hot stamping of automotive body parts, hot forming of sheet metals.

High wear loaded dies with flat impressions, hot and cold shear knives, knives for cutting sheet >7mm, highly stressed punches, profiling rolls.

### Condition of delivery:

Soft annealed to max. 250 HB

### Physical properties:

Thermal expansion coefficient	$\left[ \frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	68-212°F	68-392°F	68-572°F	68-752°F
		10,5	10,7	11,3	11,6
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	68°F	662°F	1292°F	
		26,4	27,8	30,6	

### Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
1570 - 1650°F	furnace	max. 250 HB

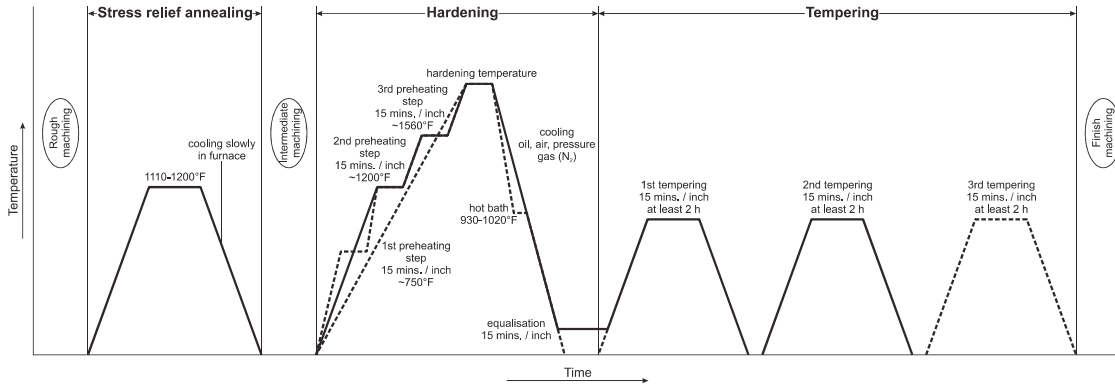
Stress relief annealing

Temperature	Cooling	
1110 - 1200°F	furnace	

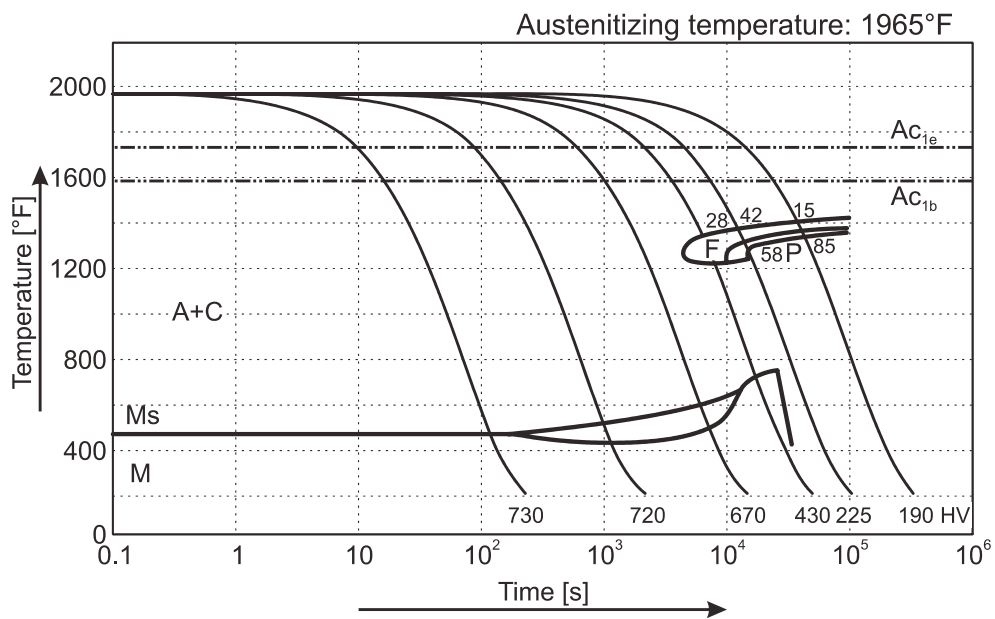
Hardening

Temperature	Cooling	Tempering
2010 - 2175°F	oil, pressure gas (N <sub>2</sub> ), air or hot bath 930 - 1020°F	see tempering diagram

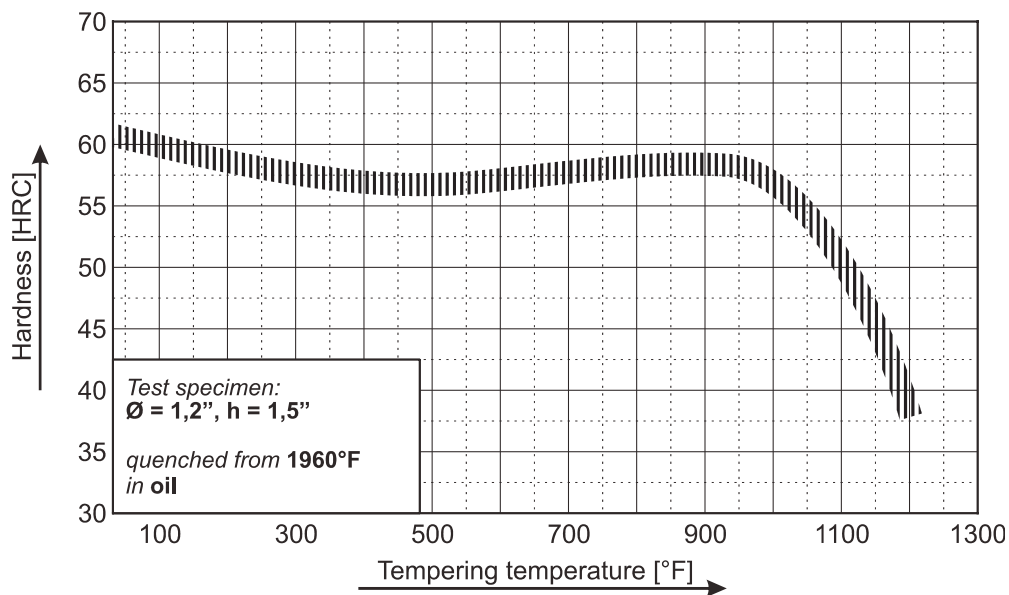
## (WP7V) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.