



Material No.: Code:
1.2210 115CrV3

DE - Brand:
PV4

Chemical composition:
(Typical analysis in %)

C	Cr	V					
1,20	0,70	0,10					

Steel properties:

Wear resistant Cr-V-alloyed tool steel. Similar to AISI L2.

Applications:

Cutting and punching tools, thread rolling tools, twist drills, ejector pins.

Condition of delivery:

Soft annealed to max. 220 HB

Physical properties:

Thermal expansion coefficient	$\left[\frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	$\frac{20-100^{\circ}\text{C}}{11,8}$	$\frac{20-200^{\circ}\text{C}}{12,5}$	$\frac{20-300^{\circ}\text{C}}{12,9}$	$\frac{20-400^{\circ}\text{C}}{13,5}$
Thermal conductivity	$\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	$\frac{20^{\circ}\text{C}}{33,5}$	$\frac{350^{\circ}\text{C}}{32,0}$	$\frac{700^{\circ}\text{C}}{31,0}$	

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
710 - 750°C	furnace	max. 220 HB

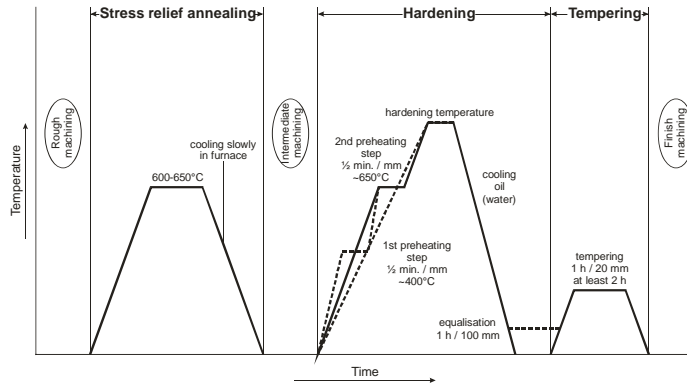
Stress relief annealing

Temperature	Cooling	
600 - 650°C	furnace	

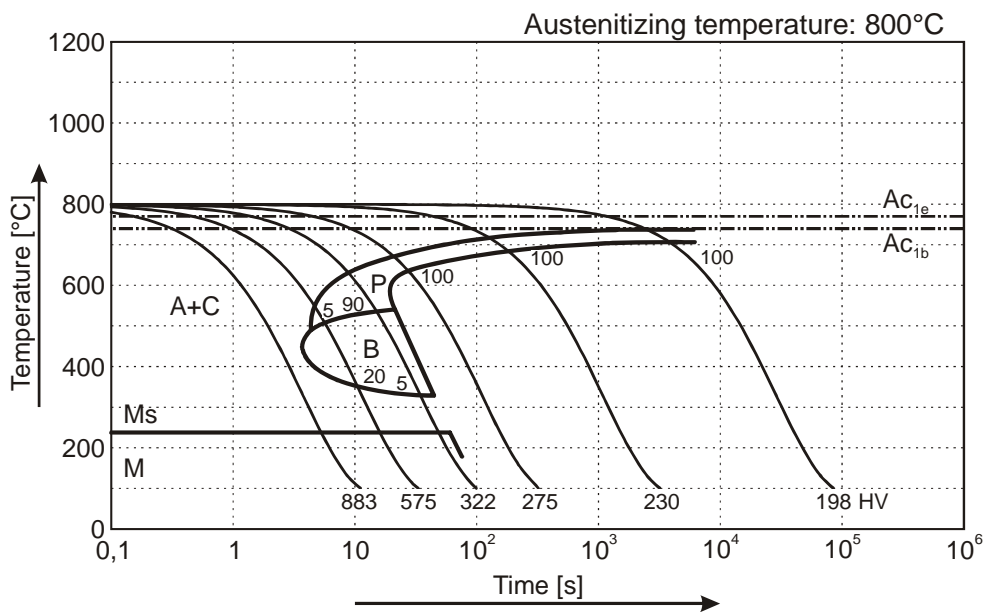
Hardening

Temperature	Cooling	Tempering
780 - 840°C	oil (water)	see tempering diagram

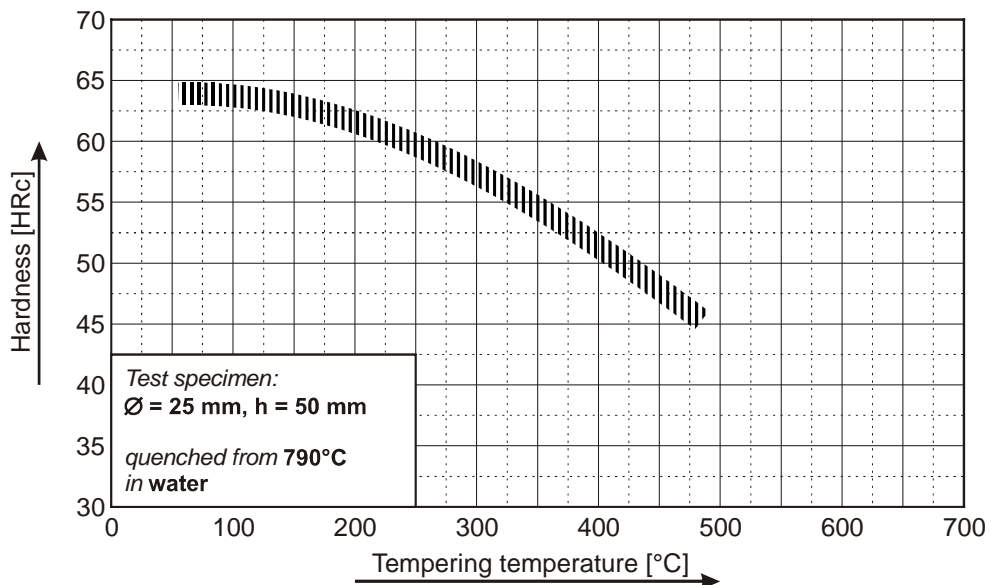
(1.2210) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.