Material No.: Code: DE - Brand:

1.4112 X90CrMoV18 R17X

Chemical composition:
(Typical analysis in %)

C	Cr	Mo	V				
0,90	18,00	1,10	0,10				

Steel properties:

Stainless martensitic alloy, good hardening capacity, high wear resistance. Similar to AISI 440B.

Applications:

Knives and cutting tools, punching discs, screw parts for plastic processing, ball bearings, injection moulding nozzles.

Condition of delivery:

Soft annealed to max. 265 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
		10,3	10,8	11,2	11,6

Thermal conductivity	$\left[\frac{W}{m \cdot K}\right]$	20°C	350°C
		15,9	20,6

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
780 - 840°C	furnace	max. 265 HB

Stress relief annealing

Temperature	Cooling	
600 - 650°C	furnace	

Hardening

Temperature	Cooling	Tempering
1000 - 1050°C	oil, pressure gas (N_2), air or hot bath 500 - 550°C	see tempering diagram

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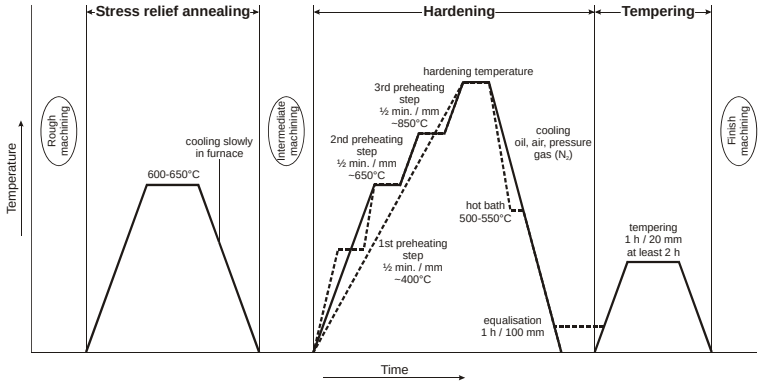
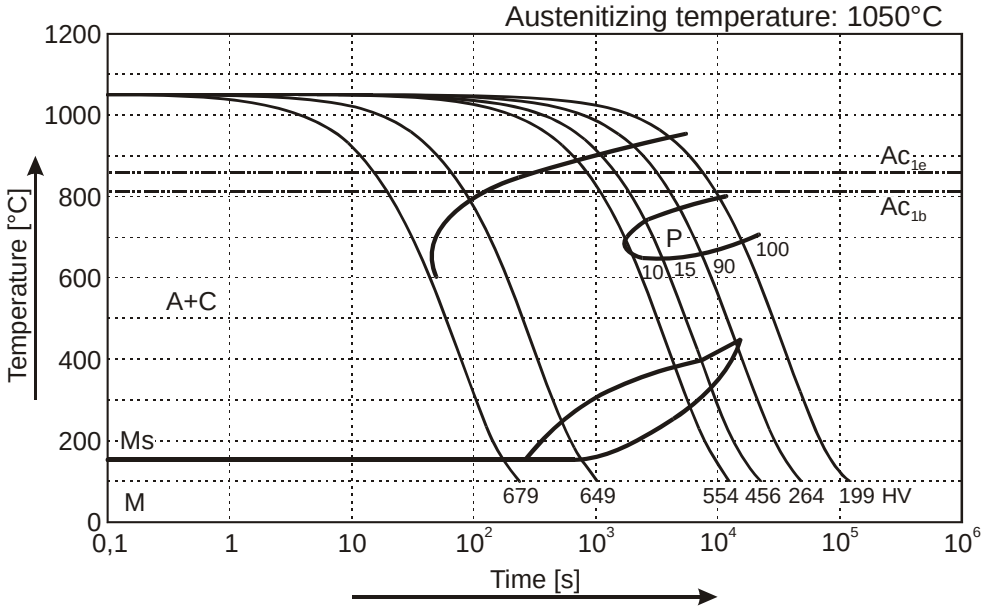
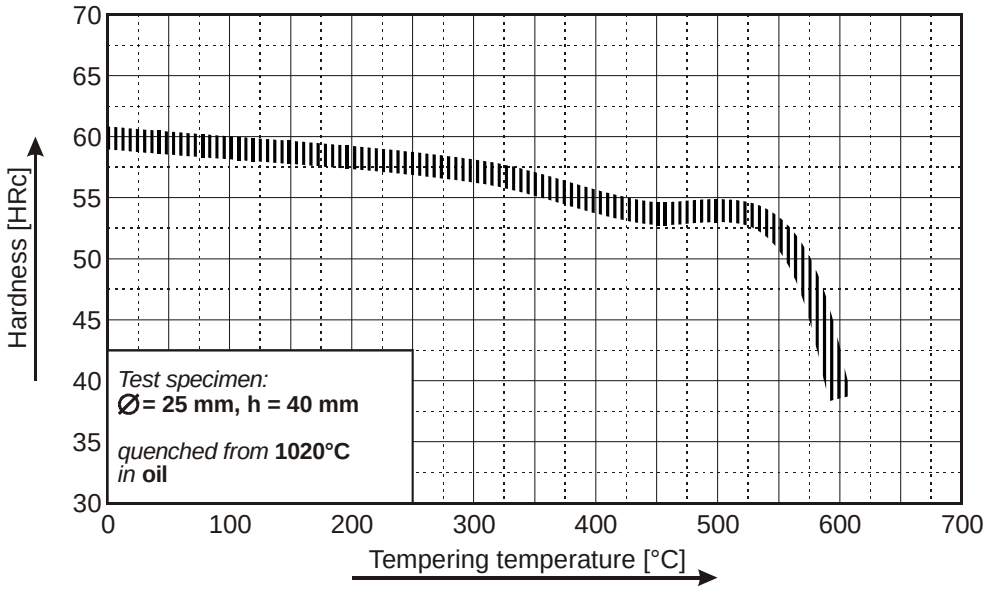
(1.4112) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.