

DE - Brand:

Special Steel

PMD440

Chemical composition:

(Typical analysis in %)

C	Cr	Mo	V				
2,20	17,50	0,50	5,80				

Steel properties:

Powder-metallurgical martensitic stainless steel, high carbide volume with finely distributed carbides, segregation-free.

Applications:

Processing of abrasive polymers, with both corrosion and wear, food processing industry, stainless wear resistant parts, general tooling.

Condition of delivery:

Soft annealed to max. 305 HB

Physical properties:

Thermal expansion coefficient	$\left[\frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	20-100°C	20-200°C	20-300°C	20-400°C
		10,7	10,8	11,2	11,6
Thermal conductivity	$\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C		
		19,1	21,5		

Heat treatment:

Soft annealing
Annealing only in neutral atmosphere

Temperature	Cooling	Hardness
880 - 900°C	furnace	max. 305 HB

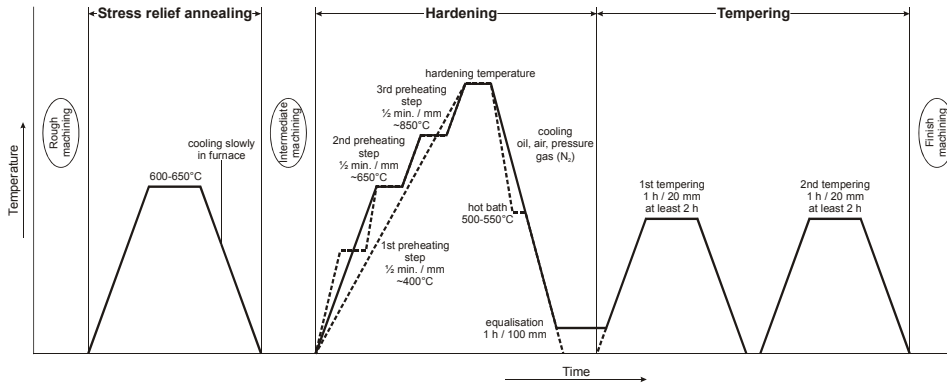
Stress relief annealing

Temperature	Cooling	
600 - 650°C	furnace	

Hardening

Temperature	Cooling	Tempering
1010 - 1120°C	oil, pressure gas (N ₂), air or hot bath 500 - 550°C	see tempering diagram

(PMD440) Thermal Cycle Diagram



PMD 440 is usually tempered between 150-260°C.

Reference values for hardness after tempering two times, according to the austenitizing temperature (all datas ±1 HRc).

Tempering temperature	Austenitizing temperature		
	1010°C	1070°C	1120°C
150°C	55,0 HRc	58,0 HRc	60,0 HRc
210°C	54,0 HRc	57,0 HRc	59,0 HRc
260°C	53,0 HRc	55,0 HRc	58,0 HRc