1.2842 90MnCrV8

Chemical Composition :

		C	Si	Mn	P	S	Cr	V
Min.	%	0.85	0.10	1.80			0.20	0.05
Max.	%	0.95	0.40	2.20	0.030	0.030	0.50	0.20

Material Code :

DIN	ASTM	JIS	GOST
1.2842 90MnCrV8	O2	-	9G2F

Properties :

Oil hardenable medium alloyed cold work tool steel, highest dimensional stability during heat treatment, shallow dept of hardening, good wear resistance and toughness, easy to machine and simple heat treatment, good cutting ability and edge holding properties, low distortion, low polishability.

Applications :

Tool steel for universal use, highly stressed plastic moulds, mould inserts for high hardeness and abrasive stress, blanking and stamping tools for all types cutting sheet metals up to 6 mm thickness, cold forming dies, cutting and punching tools of all types, shear blades for paper, plastic and metalworking industries, reamers, thread chasers and cutting tools, pressure pads, guide pins, taps, measuring tools, precision calipers and plug gauges, woodworking tools, plastic and rubber compression moulds, deep drawing tools, clipping beds and punches, industrial knives, ejector pins, drills, guide strips, broaches, box grooves, clamping plates.

Physical Properties :

Density : at 20 °C 7,85 kg/dm^3

Thermal conductivity : at 20 °C 30,0 W/(m.K)

Thermal expansion between : 20 °C and... °C, 10^{-6} m/(mK)

100 °C	200 °C	300 °C	400 °C	500 °C
11,5	12,0	12,2	12,5	12,8

Heat Treatment :

Annealing : 680 - 720 °C

Hardness after annealing : Max. 220 HB

Stress relieving : Approx. 650 °C

Hot forming : 1050 - 850 °C

Hardening : 790 - 820 °C

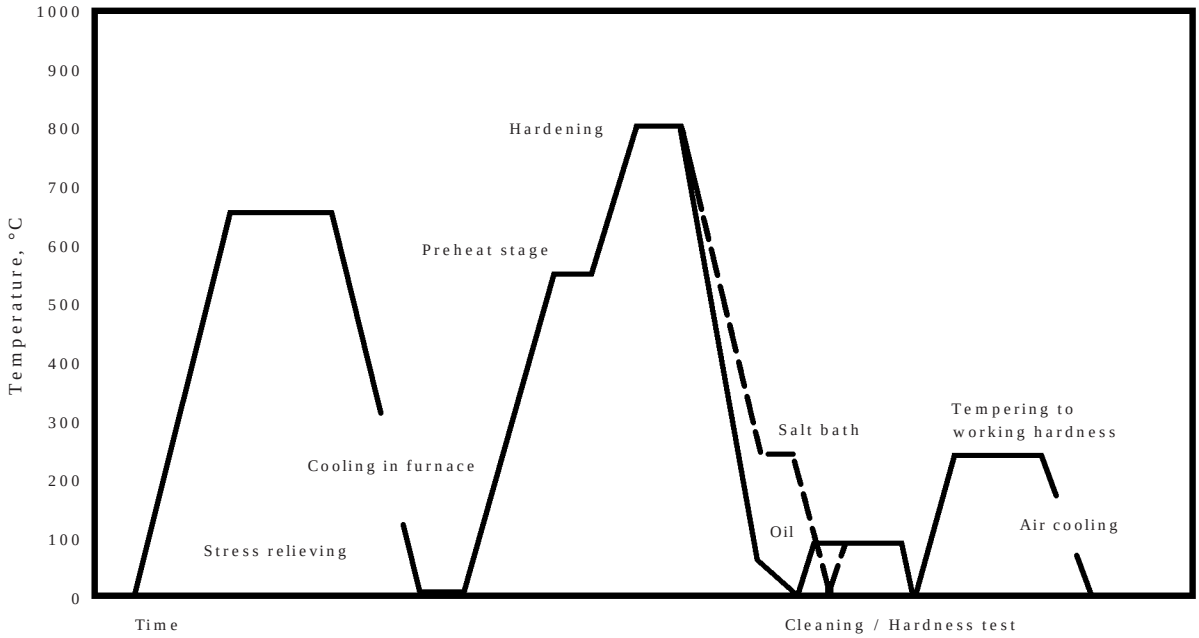
Quenching media : Oil, Salt bath (220 - 250 °C) up to 20 mm thickness

Hardness after quenching : 63 - 65 HRC

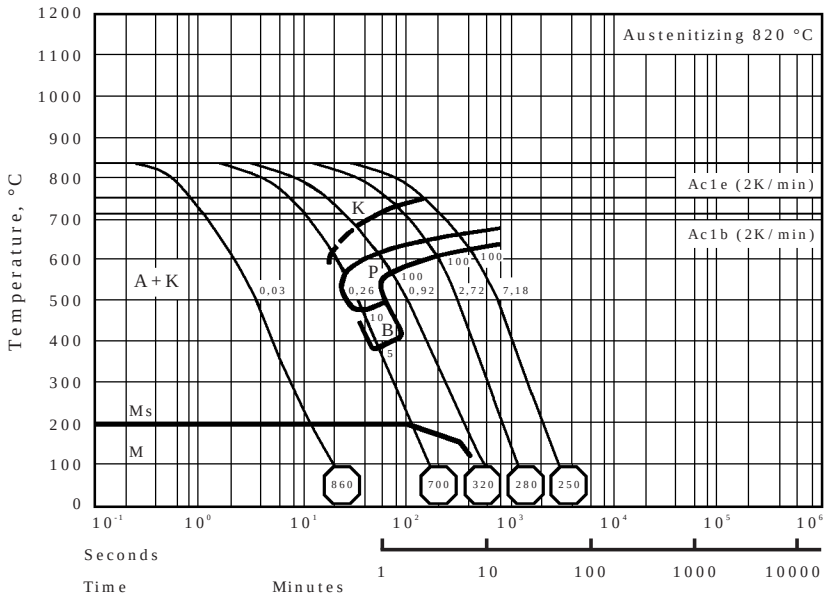
Hardness after tempering :

100 °C	200 °C	300 °C	400 °C
64 HRC	62 HRC	57 HRC	50 HRC

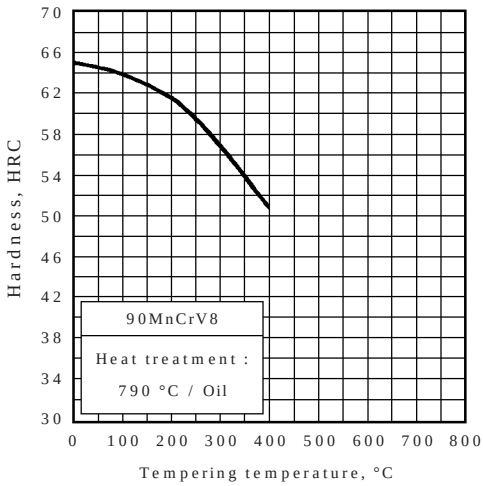
Heat Treatment Sequence



Time - Temperature - Transformation Diagram



Tempering Diagram



Stock Sizes

Round Bars mm

10.5 12.5 13.5 14.5 15.5 16.5 18.5 20.5 22.5 25.5 28.5 30.5 32.8 35.8 40.8
45.8 50.8 55.8 60.8 66 71 81 91 101.5 111.5 121.5 131.5 141.5 151.5 162
172 182 202 222 252.5 282.5 302.5

Square Bars mm

20 25 30 40 50 60 70 80 100 120 150

Flat Bars mm Width x Thickness

25 x 10 15 20
30 x 10 15 20 25
40 x 10 15 20 25 30
50 x 6 10 15 20 25 30 40
60 x 6 10 15 20 25 30 40
70 x 10 15 20 25 30 40
80 x 10 15 20 25 30 40 50 60
90 x 20 25 30
100 x 10 15 20 25 30 40 50 60 80
120 x 10 15 20 25 30 40 50 60 80 100
150 x 15 20 25 30 40 50 60 80 100

160 x 20 25 30 40 50
180 x 20 25 30 40 50
200 x 20 25 30 40 50 60 80 100
220 x 30 40 50 60
250 x 20 25 30 40 50 60 80 100
300 x 25 30 40 50 60 80 100
350 x 10 15 20 25 30 40 50 60 70 80 100
410 x 15 20 25 30 40 50 60 70 80 100
450 x 30 40 50 60 70 80
510 x 15 20 25 30 40 50 60 70 80
610 x 15 20 25 30 40 50 60 70 80