1.2210 115CrV3

Chemical Composition :

		C	Si	Mn	P	S	Cr	V
Min.	%	1.10	0.15	0.20			0.50	0.07
Max.	%	1.25	0.30	0.40	0.030	0.030	0.80	0.12

Material Code :

DIN	ASTM	JIS	GOST
1.2210 115CrV3	L2	SKS43	11ChF

Properties :

Chromium-vanadium alloyed cold work tool steel with high wear resistance, high edge holding properties, simple heat treatment, good machinability and toughness properties, bright ground and polished according to standard DIN 670 h8.

Applications :

Silver steel for guiding pins, small tools and structural parts in precision mechanics, button-type drills and jagged bits, screw taps, milling cutters, broaching tools, piercing punches, ejector pins, twist drills, punches and taps, surgical instruments, reamers, countersinks, dowels, engraving tools, metal cutting saws, axles and shafts, toothed drills, scraping tools, gear cutters, mortice, wood chisels, guide rods.

Physical Properties :

Density : at 20 °C 7,80 kg/dm^3

Thermal conductivity : at 20 °C 32,0 W/(m.K)

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

100 °C	200 °C	300 °C	400 °C	500 °C
11,8	12,5	12,9	13,5	13,7

Heat Treatment :

Annealing : 710 - 750 °C

Hardness after annealing : Max. 220 HB

Stress relieving : Approx. 650 °C

Hot forming : 1050 - 850 °C

Hardening : 780 - 810 °C or 810 - 840 °C

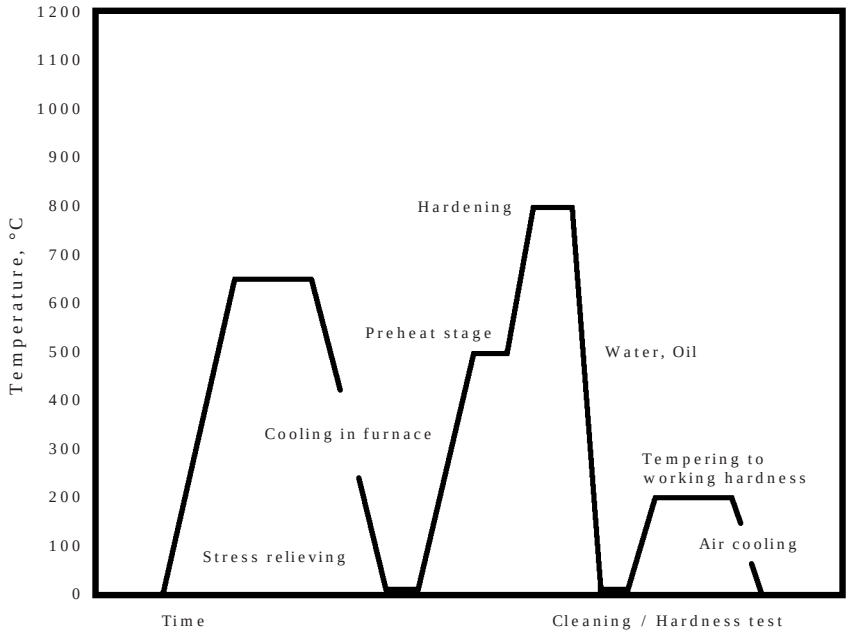
Quenching media : 780 - 810 °C, Water
810 - 840 °C, Oil (up to 15 mm diameter)

Hardness after quenching : 64 - 66 HRC

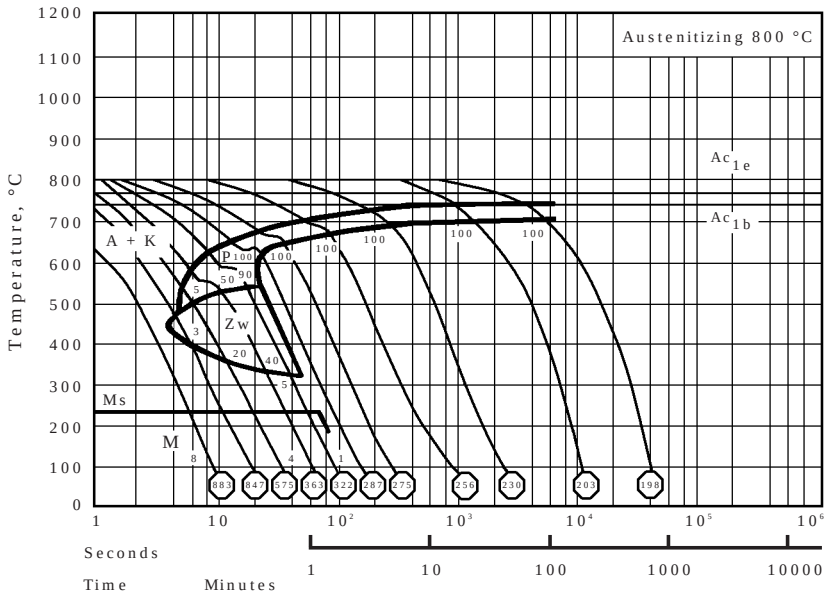
Hardness after tempering :

100 °C	200 °C	300 °C	400 °C
64 HRC	62 HRC	57 HRC	51 HRC

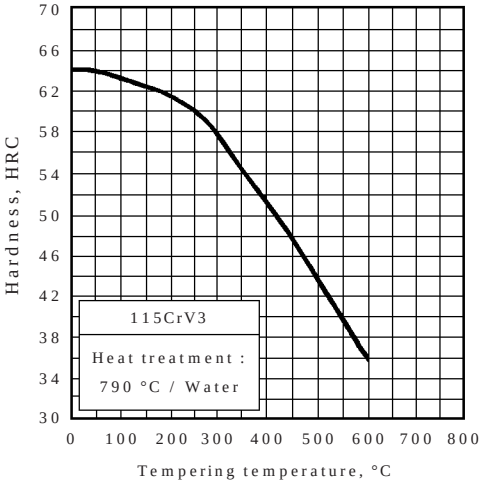
Heat Treatment Sequence



Time - Temperature - Transformation Diagram



Tempering Diagram



Stock Sizes

Round Bars mm

Max. mm	Min. mm	kg/m	Max. mm	Min. mm	kg/m	Max. mm	Min. mm	kg/m
2	1.986	0.024	8.5	8.478	0.443	17	16.973	1.770
2.5	2.486	0.038	9	8.978	0.496	18	17.973	1.985
3	2.986	0.055	9.5	9.478	0.553	19	18.967	2.212
3.5	3.482	0.075	10	9.978	0.613	20	19.967	2.450
4	3.982	0.098	10.5	10.473	0.675	22	21.967	2.965
4.5	4.482	0.124	11	10.973	0.741	23	22.967	3.241
5	4.982	0.153	11.5	11.473	0.810	24	23.967	3.529
5.5	5.482	0.185	12	11.973	0.882	25	24.967	3.829
6	5.982	0.221	12.5	12.473	0.957	28	27.967	4.802
6.5	6.478	0.259	13	12.973	1.035	30	29.967	5.513
7	6.978	0.300	14	13.973	1.201	32	31.961	6.270
7.5	7.478	0.345	15	14.973	1.378	35	34.961	7.504
8	7.978	0.392	16	15.973	1.568	40	39.961	9.802