

DAYE JINGCHENG MOULD CO., LTD

TOOL STEEL PRODUCT

1.2714 Hot Work Tool Steel

Identification

Mat. No.	Designation by Standards		
	DIN	JIS	AISI
1.2714	55NiCrMoV7	SKT4	L6

Chemical Composition

C	Si	Mn	Cr	Mo	V	Ni
0.5	0.10	0.65	1.00	0.45	0.07	1.50
0.6	0.40	0.95	1.20	0.55	0.12	1.80

General Information

Machinability

When annealed to a maximum of Brinell 217, L6 machines with relative ease. It has a rating of 85, as compared with a 1% carbon tool steel rated at 100.

Dimensional Stability

L-6 has good safe-hardening and non-deforming properties characteristic of oil-hardening steels. When properly oil quenched, expansion of 0.0015 in./ in. is expected.

Impact Properties

L-6 has good impact-resistance when tempered at 400°F or higher. Unnotched Charpy values and Rockwell hardness were obtained from standard specimens heat-treated by quenching in oil from 1525°F and tempered from 300 to 1000°F.

Applications

standard materials for forging dies, hot shear knives, punches, backing plates, die holders, hot punching tools.

Heat Treatment

Annealing

650 to 700°C (1202 to 1292°F)

Slow controlled cooling in furnace at a rate of 10 to 20°C/hr (50 to 68°F/hr) down to approx. 600°C, (1112°F) further cooling in air. Hardness after annealing: max. 248 HB.

Stress relieving

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approx. 650°C (1202°F)

Slow cooling in furnace; intended to relieve stresses set up by extensive machining, or in complex shapes. After through heating, hold in neutral atmosphere for 1 - 2 hours.

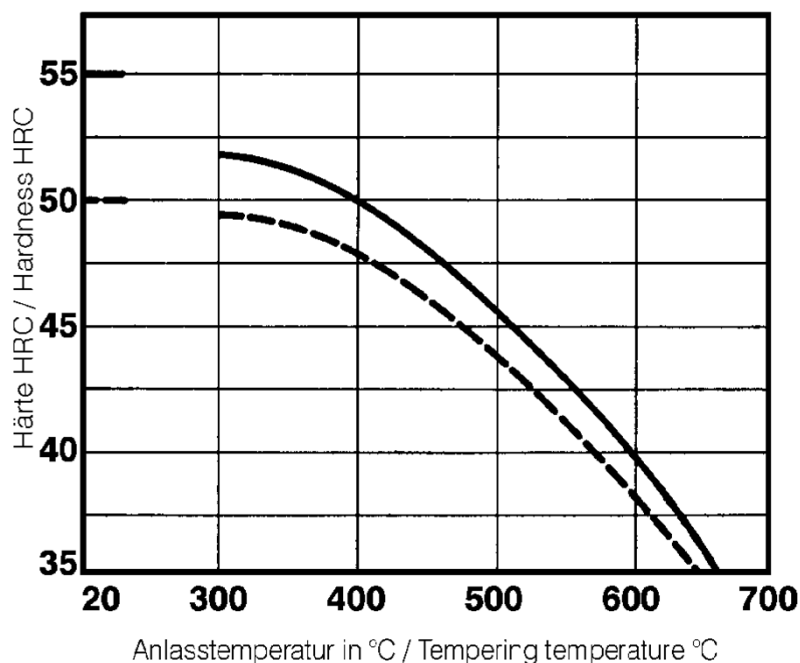
Hardening

830 to 870°C (1526 to 1598°F) / oil, 870 to 900°C (1598 to 1652°F) / air Holding time after temperature equalization: 15 to 30 minutes. Obtainable hardness: 52 - 58 HRC in oil, 44 - 50 HRC in air.

Tempering

Slow heating to tempering temperature immediately after hardening / time in furnace 1 hour for each 20 mm of workpiece thickness but at least 2 hours / cooling in air. It is recommended to temper at least twice. A third tempering cycle for the purpose of stress relieving may be advantageous

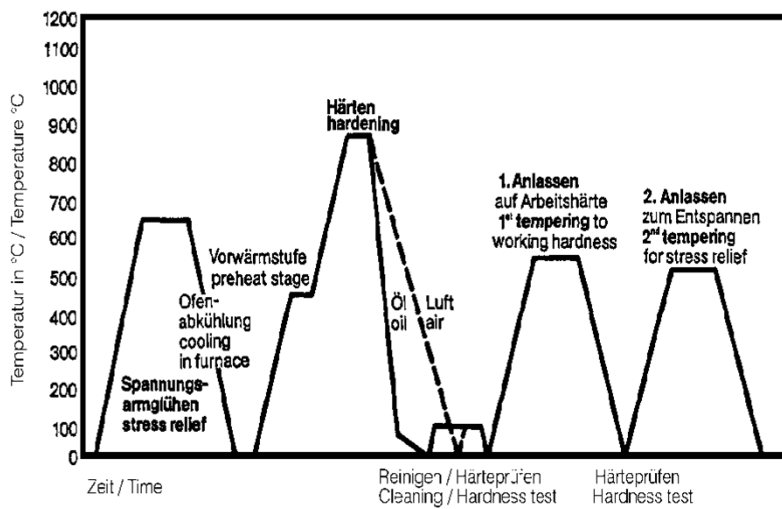
Tempering chart



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Heat treatment sequence



Hot strength chart

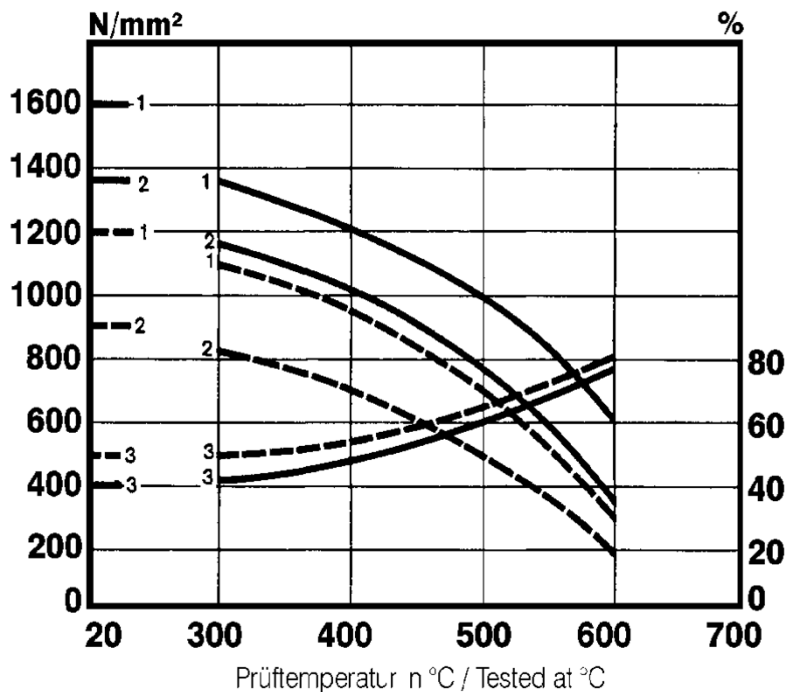
_____ heat treated 1600 N/mm²

- - - - - heat treated 1200 N/mm²

1..... Tensile strength N/mm²

2..... 0.2% proof stress N/mm²

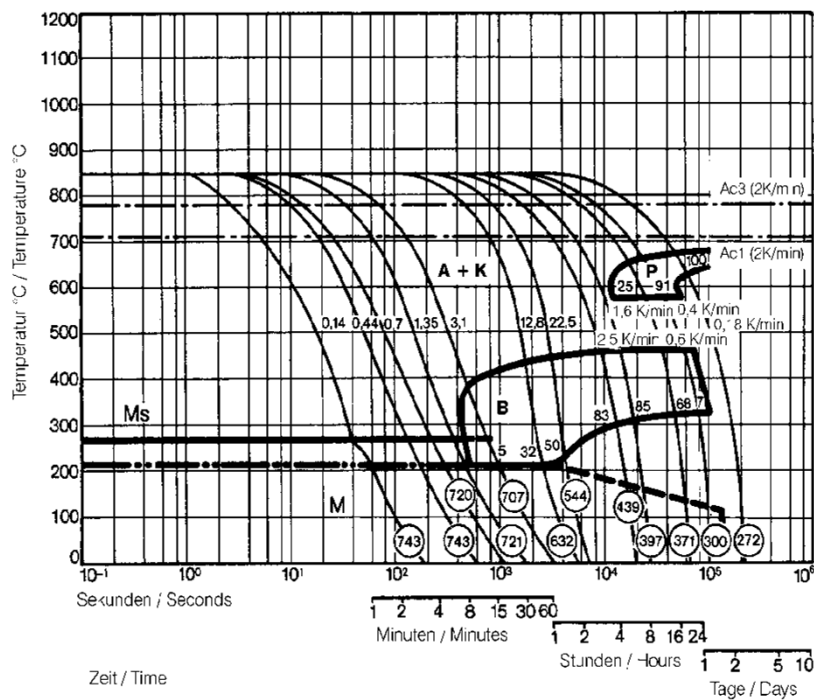
3..... Reduction of area %



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Continuous cooling CCT curves



Other Information

Repair welding

There is a general tendency for tool steels to develop cracks after welding. If welding cannot be avoided, the instructions of the appropriate welding electrode manufacturer should be sought and followed.