



NESSteel Inc.

83 Gerber Drive, Tolland, CT 06084

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High Speed AISI T-15

T-15 is a high speed, powdered-metal steel, offering high hardness values and maximum wear resistance. Typical analysis is shown in the chart below:

Carbon	Silicon	Manganese	Chromium	Molybdenum	Vanadium	Tungsten	Cobalt
1.50%	0.20%	0.25%	4.75%	<1.00%	5.00%	12.50%	5.00%

Because of T-15's evenly distributed carbides, the finished steel offers improved hardness, abrasion resistance and dimensional stability.

T-15 is used in a variety of applications, such as:

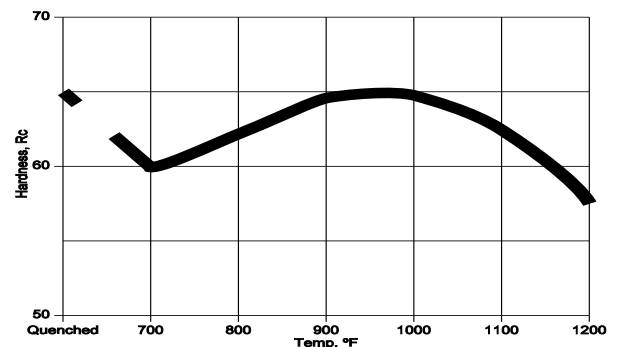
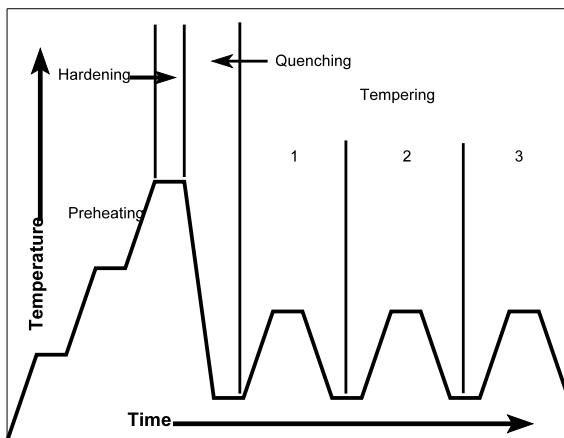
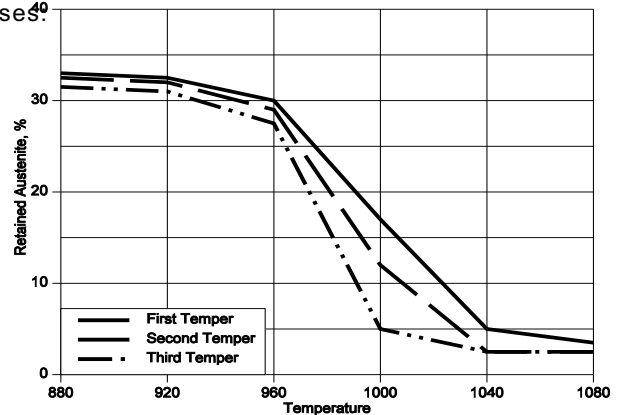
- Slitting Saws
- Slotting Saws
- Drills
- Endmills
- Hobs
- Milling Cutters
- Slitting Knives
- Stamping
- Blanking Punches
- Blanking Dies
- Forming Dies
- Fine Blanking Tools
- Shearing Knives

Temperature Recommendations:

Annealing: 1600°F - 1650°F
 Preheating: 1500°F - 1600°F
 Hardening: 2225°F - 2300°F
 Tempering: 1000°F

Note: A minimum of three tempers are recommended.

Typical curve of retained austenite during the tempering phase⁴⁹



Hardness at Austenitizing temp of 2175°F, tempered four times.

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Additional Data

Heat Treatment

Forging limits 2100/1700°F

Stress relieving . . . 1100/1350°F

Annealing

Full Anneal

1. Heat to 1600°F, hold for 2 hours
2. Cool slowly in furnace at maximum rate of 25°F/hour to below 1000°F
3. Air cool

Cycle anneal

1. Heat to 1650°F, hold for 2 hours
2. Furnace cool to 1400°F, hold 4 to 6 hours
3. Air cool

Heat treating

Preheat range 1500/1600°F

Hardening range: . Furnace - 2225/2300°F
Salt Bath - 2225/2275°F

Quench

Air, oil, interrupted oil, interrupted salt

Tempering Normal range - 1000/1075°F
Usual time - 2 hours per temper

Typical hardness values over a range of temperatures, austenitized in a salt bath, quenched in oil, and tempered two hours three times at temperatures indicated:

Tempering Temperature	2150°F	2250°F
As hardened	64/66	64/66
1000°F	64/66	66/68
1025°F	64/66	65/67
1050°F	63/65	64/66
1100°F	61/63	63/65

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