



# INTERNATIONAL TOOL STEEL

*The World's Finest Tool Steel*

## A-8 MODIFIED

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### PRODUCT INFORMATION

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#### TYPICAL PARTS

Chipper knife, squaring shears, slitter knives, scrap shears, roll splitters

#### FORGING/ROLLING

Forge or roll from 2040° F - 2150° F. Do not forge or roll below 1700° F. Cool slowly from the forging or rolling temperature. Do not normalize.

#### ANNEALING

Heat slowly to 1625° F, and hold for uniformity, cool at a rate of 20° F per hour to 1200° F, and then air cool. Expected Brinell hardness 200-241 Max.

#### HARDENING

Preheat to 1100° F - 1290° F, soak until uniformly heated, and either transfer or raise furnace temperature to 1850° F - 1925° F, and hold at temperature no more than 25 minutes regardless of section size. Air cool in circulating air or an air blast.

#### TEMPERING

Temper immediately after quenching, before the part has cooled to below 150°F. Parts should be held a minimum of 2 hours per inch of thickness. Double tempering is recommended for the grade, The following tempering table may be used as a guide. However, since 1/2" diameter specimens were used as a test, it may be found that heavier sections are several points lower. Tempering data was based on samples austenitized at 1925° F.

Chemical Analysis	
Carbon	.48/.55
Phosphorus	.030 Max.
Manganese	.20/.50
Sulfur	030 Max.
Silicon	.75/1.05
Chromium	7.25/8.75
Vanadium	.20/.55
Tungsten	0/.50
Molybdenum	1.25/1.75
Cobalt	—

Tempering Temperature °f	
As-quenched	60.0
400	58.5
500	58.0
600	57.5
700	57.5
800	58.0
900	58.5
1000	58.0
1100	56.0
1200	37.0

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