



INTERNATIONAL TOOL STEEL

The World's Finest Tool Steel

440 C

PRODUCT INFORMATION

TYPICAL PARTS

Plastic granulator knives, cutlery, bearings, nozzles, valve parts, balls and sears.

FORGING/ROLLING

Preheat to 1250° F soak thoroughly. Then raise to 2050° F - 2100° F. Do not forge or roll below 1700° F, cool slowly from the forging and rolling temperature. Do not normalize.

ANNEALING

Heat slowly to 1550° F-1650° F, and hold for uniformity. Furnace cool at a rate not to exceed 20° F per hour to 1000° F, and then air cool. Expected Brinell hardness about 230.

HARDENING

Preheat to 1200° F - 1450° F, soak until uniformly heated, and either transfer or raise furnace temperature to 1850° F -1950° F, and hold 1 (one) hour per inch of greatest thickness. Quench into 150° F oil or air cool.

TEMPERING

Temper immediately after quenching, before the part has cooled to below 150°F. Double tempering is recommended and the parts should be held a minimum of 2 hours per inch of greatest thickness. Recommended tempering range is 300°F-700°F. Tempering about 700F will result in lower impact strength and reduce corrosion resistance. The tempering table may be used as a guide. However, since 1/2" diameter specimens were used for this test, it may be found that heavier sections are several points lower.

CHEMICAL ANALYSIS 440C	
Carbon	1.00/1.10
Manganese	.40/.60
Phosphorus	.030 Max.
Sulfur	015 Max.
Silicon	030/.60
Chromium	16.50/17.50
Vanadium	—
Tungsten	—
Molybdenum	.40/.60
Cobalt	—

TEMPERING TEMPERATURE °F	
As-quenched	60.0
300	59.9
400	57.5
500	56.0
600	55.0
700	55.0
800	56.0
900	57.0
1000	52.5
1100	43.0

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