

BOHLER W302 ISOBLOC®

Hot Work Tool Steel

Chemical Composition (average %) & Heat Treatment Procedure

C	Si	Mn	Cr	Mo	V
.39	.20	.30	5.20	1.40	.95

Heat Treatment Procedure

Preheat Temperature: Initial preheat: heat through to 1200°F
Second preheat: heat through to 1550°F

Hardening Temperature: 1870 - 1920°F, typically 1885°F
Soak time after core of tool has reached the hardening temperature: minimum 30 minutes, maximum 1 hour.

Quenching:

Vacuum	Salt Bath/Fluidized	Oil
Utilizing inert gas at positive pressure, quench as rapidly as possible. Complex tool geometries or thick cross sections may require an interrupted (step) quench at 750-850°F to equalize core and surface temperature. Continue cooling to 150°F.	Quench to 930-1020°F, equalize. Continue cooling in circulating air to 150°F.	Warm oil, limit to small, uncomplicated tooling. Note: There is an increased risk for cracking and/or excessive distortion.

Tempering Temperature: Immediately perform tempering operation once tool has reached 150°F. Recommend a minimum of two tempers with intermittent cooling to room temperature.

Expected hardness (hardening temperature 1885°F):

<u>Tempering Temperature (°F)</u>	<u>Hardness (+/- 2 HRC)</u>
1020	50
1050	48
1080	46
1110	44
1140	42

Holding Time: 1 hour per inch of thickness or maintain at temperature for a minimum of 2 hours.

Note: Leave adequate machine stock prior to heat treatment to allow for any dimensional changes or distortion which may occur. For reference, the size change should not exceed .0015 inches per inch per side if stress relieving has been performed after rough machining.

