

UDDEHOLM VANCRON® 40

SuperClean³ Powder Metallurgical Tool Steel

General Heat Treatment Recommendations

	Vacuum	Salt Bath** / Fluidized Bed	Atmosphere Furnace Muffle Furnace / Packed
	** Salt Bath heat treatment can be performed but is not recommended for details with blind holes or threaded holes that will not be rework after heat treatment.		
Preheating Temperature	1. Bring up to 1200°F, equalize 2. Heat up to 1550°F, equalize	1. 1100 – 1200°F, equalize 2. 1500 – 1550°F, equalize	1. Bring up to 1200°F, equalize 2. Heat up to 1550°F, equalize
Hardening Temperature (Austenitizing)	1830 – 2010°F (Normally 1920°F) Holding time after the tool or part has fully heated through at the hardening temperature: 30 minutes for temperature below 2010°F, 10 minutes for temperatures above 2010°F. Alternatively hold 20 minutes for first 1" and then 15 minutes for each additional inch of wall thickness.		
Quenching *	Vacuum furnace with high speed gas at sufficient overpressure (2–5 bar)	Alt. 1 Quench in Salt 1020°F Alt. 2 Circulated high speed inert gas	Alt. 1 Circulated inert gas Alt. 2 Circulated air
	*Cooling rate must be adequate to avoid any transformation products, with decreased properties as a result. However, also consider the risk of excessive distortion from very fast cooling.		
Tempering (minimum three times) Temper immediately after quenching when the complete tool reaches 150°F	Tempering Temperatures (°F)	Hardening Temperatures	
	1040	1870°F 59-61 HRC	1920°F 60-62 HRC
	Tempering Times: 1 hour per inch of wall thickness, or hold at temperature a minimum of 2 hours.		
	• For tools requiring maximum dimensional stability a sub-zero treatment should be used. Consult Bohler Uddeholm before using.		
Stress Temper performed on hardened tools after EDM.	Temperature: Shall be 50°F (25°C) below the highest tempering temperature. Time: Soak 2 hours once tool comes to temperature. Cool in still air.		
Dimensional Stability	Average size change as a result of hardening and tempering may not exceed 0.003 inch/inch/maximum dimension if the tool has been stress relieved before finish machining. If stress relieving is not performed as recommended, dimensional stability may be inconsistent and cannot be guaranteed.		

UDDEHOLM VANCRON® 40

Anti-galling P/M Tool Steel

- Excellent lubricity for forming applications
- Does not need to be surface treated
- Excellent machinability
- Good toughness

This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should not therefore be construed as a warranty of specific properties of the products described or a warranty for fitness for a particular purpose. It is your responsibility to confirm you have the latest revision of this document (verify on our website) and that you forward to your Heat Treatment service provider. Failure to do so may result in inferior material properties.



USA: 1-800-METAL20
 Website: www.bucorp.com
 E-mail: info@bucorp.com