

VANADIS® 10

Powder Metallurgy Cold Work Tool Steel

We use this material for
very corrosive & abrasive materials.

Heat Treatment Recommendations

	Vacuum	Salt Bath/Fluidized Bed	Atmosphere Furnace Muffle Furnace/Packed											
Preheating Temperature	1. Bring up to 1200°F, equalize 2. Heat up to 1550°F, equalize (optional)	1. 1100-1200°F, equalize 2. 1500-1600°F, equalize	1. Bring up to 1200°F, equalize 2. Heat up to 1550°F, equalize											
Hardening Temperature Austenitizing	1870-1980°F (Normally 1870°F) Time: 45 minutes for first 1" and then 15 minutes for each additional inch of wall thickness. (Holding time minimum 45 minutes (maximum 90 minutes) after the tool is fully heated through.)													
Quenching	Alt. 1 Inert gas, positive pressure Alt. 2 Back-filled pressurized gas to 1050°F, then equalize center and surface. Continue to 600°F and equalize. Then cool in circulating air.	Alt. 1 Quench in salt 390-930°F Alt. 2 Forced air circulation	Forced circulation of air or inert gas											
Temper immediately when the tool reaches 150°F														
Tempering (minimum two times)	<table border="0"> <thead> <tr> <th rowspan="2">Temperature</th> <th colspan="2">Hardening Temperature:</th> </tr> <tr> <th>1870°F Hardness</th> <th>1980°F Hardness</th> </tr> </thead> <tbody> <tr> <td>400°F</td> <td>62 +/-1 RC</td> <td></td> </tr> <tr> <td>940°F</td> <td>61 +/-1 RC</td> <td>64 +/-1 RC</td> </tr> </tbody> </table> <p>Time: 1 hour per inch of wall thickness, or hold at temperature a minimum of 2 hours</p>			Temperature	Hardening Temperature:		1870°F Hardness	1980°F Hardness	400°F	62 +/-1 RC		940°F	61 +/-1 RC	64 +/-1 RC
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Size changes at heat treatment should not exceed 0.15% if the tool has been stress relieved before finish machining. Average size change should not exceed 0.0015" per inch per side of a normally designed tool.														

VANADIS® 10 - the new PM cold work tool steel

- Isotropic mechanical properties — greater reliability in production
- Increased toughness — less down time
- Higher wear resistance — longer tool life

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.



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