Uddeholm Powder Metallurgy Tool Steels
Heat Treatment Guidelines for Specific Applications

A. For Optimum Wear Resistance

P/M Steel Grades	*VANADIS 4*	*VANADIS 6*	*VANADIS 10*	*VANADIS 23*	*ELMAX*
Hardening Temp., °F (°C)	2100 (1150)	2100 (1150)	2100 (1150)	2150 (1180)	2100 (1150)
Tempering Temp., °F (°C)	3 x 1000 (3 x 540)	3 x 1040 (3 x 560)	3 x 1000 (3 x 540)	3 x 1040 (3 x 560)	3 x 980 (3 x 525)
Hardness, HRC	62-64	63-65	64-66	64-66	59-61

B. For Optimum Ductility

P/M Steel Grades	*VANADIS 4*	*VANADIS 6*	*VANADIS 10*	*VANADIS 23*	*ELMAX*
Hardening Temp., °F (°C)	1760 (960)	1800 (980)	1800 (980)	1920 (1050)	1920 (1050)
Tempering Temp., °F (°C)	2 x 480 (2 x 250)	2 x 480 (2 x 250)	2 x 480 (2 x 250)	3 x 1040 (3 x 560)	2 x 480 (2 x 250)
Hardness, HRC	55-57	60-62	59-61	59-61	54-56

Note:

The choice of heat treatment has to be based on the specific requirements of the individual application.

These guidelines are based on our present state of knowledge and are 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.