

	MATERIAL	OPERATION	CONDITION	EDGE PREP.	GRADE	Vc (m/min)	fn (mm/rev)	COOLANT
TURNING	Hardened steel	finishing ap < 0.5 mm		SE	NBL050C	140 <b>190</b> 240	0.06 <b>0.14</b> 0.22	
				UE	NBL150C tool life	120 <b>170</b> 220	0.06 <b>0.15</b> 0.24	
					NBL250C reliability	100 <b>150</b> 200		
THREADING	Bearing steel	finishing ap < 0.5 mm		SE	NBL050C	120 <b>170</b> 220	0.05 <b>0.10</b> 0.15	
				UE	NBL150C tool life	100 <b>150</b> 200	0.06 <b>0.13</b> 0.20	
					NBL250C reliability	80 <b>130</b> 180		
			RE	NBL350C	80 <b>120</b> 160	0.06 <b>0.16</b> 0.26		
			UE	NBH900U	100 <b>140</b> 180	0.15 <b>0.30</b> 0.45		
	NBH950U	80 <b>120</b> 160		0.10 <b>0.25</b> 0.40				
GROOVING	Tool steel	finishing ap < 0.5 mm		SE	NBL150C	100 <b>140</b> 180	0.04 <b>0.09</b> 0.14	
				UE	NBL250C	80 <b>120</b> 160	0.05 <b>0.12</b> 0.19	
				RE	NBL350C	60 <b>100</b> 140	0.06 <b>0.13</b> 0.20	
			UE	NBH900U	60 <b>100</b> 140	0.10 <b>0.30</b> 0.50		
			UE	NBH950U	40 <b>80</b> 120	0.10 <b>0.25</b> 0.40		
MILLING	High speed steel	finishing ap < 0.5 mm		UE	NBL150C	100 <b>120</b> 140	0.05 <b>0.08</b> 0.11	
				UE	NBH500C	60 <b>120</b> 180	0.10 <b>0.30</b> 0.50	
	White cast iron	finishing ap < 0.5 mm		UE	NBH900U	40 <b>80</b> 120	0.10 <b>0.25</b> 0.40	
				UE	NBH500C	60 <b>90</b> 120	0.20 <b>0.40</b> 0.60	
			UE	NBH950U	40 <b>60</b> 80	0.20 <b>0.35</b> 0.50		
DRILLING	Gray cast iron	finishing ap < 0.5 mm		UE	NBH450C	400 <b>800</b> 1200	0.10 <b>0.25</b> 0.40	
				UE	NBH500C	600 <b>1000</b> 1400	0.10 <b>0.20</b> 0.30	
			UE	NBH500C	600 <b>1000</b> 1400	0.20 <b>0.40</b> 0.60		
	ADI cast iron	finishing ap < 0.5 mm		UE	NBL150C	500 <b>600</b> 700	0.05 <b>0.15</b> 0.25	
				UE	NBL250C	400 <b>500</b> 600	0.05 <b>0.15</b> 0.25	
ACCESSORIES	Sintered powder metal, high alloyed	finishing ap < 0.5 mm		UE	NBL150C	80 <b>160</b> 240	0.05 <b>0.10</b> 0.15	
				UE	NBH900U tool life	200 <b>250</b> 300	0.10 <b>0.25</b> 0.40	
					NBH950U reliability	180 <b>230</b> 280		
ACCESSORIES	Sintered powder metal, low alloyed	finishing ap < 0.5 mm		UE	NBH450C	140 <b>220</b> 300	0.10 <b>0.20</b> 0.30	

Stable machining, continuous cut  
 General machining, light interruption  
 Unstable machining, interrupted cut

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

VN	PCBN Negative				ISO513	BL				BH																						
	Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL																	
	1604□□	9.525	4.76	3.81		M	80	240			140	300																				
<p>4 edges</p>					K					400	300	200	180																			
					N					1200	1400	1200	1000																			
					S																											
					H	120	240	100	220	80	200	60	160	60	160	60	180	40	180	40	160											
GRADE APPLICATION AREA	Stable machining, continuous cut																															
■ main application	General machining, light interruption				+ Hardness																											
■ applicable	Unstable machining, interrupted cut				- Toughness																											
<b>SE H</b>  vertical	VNGA	160404S-SE-4V	RE 0.4	$a_p \triangleright$ 0.06	$f_n \triangleright$ 0.06	0.13	0.20	○																								
		160408S-SE-4V	RE 0.8	$a_p \triangleright$ 0.06	$f_n \triangleright$ 0.06	0.13	0.20	○																								
	<b>UE KH</b>  vertical	VNGA	160404S-UE-4V	RE 0.4	$a_p \triangleright$ 0.07	$f_n \triangleright$ 0.08	0.16	0.25	○		●																					
			160408S-UE-4V	RE 0.8	$a_p \triangleright$ 0.07	$f_n \triangleright$ 0.08	0.15	0.22	○		●																					

● stock standard, ○ non-standard stock

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