

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

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

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TN	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															
 6 edges					K					400 1200	300 1400	200 1200	180 1000													
					N																					
					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				-																					
applicable	Unstable machining, interrupted cut				+																					

SHARP	SE H	TNGA	160404S-SE-6V	RE 0.4	a _p ▶ f _n ▶	0.06 0.06	0.13 0.12	0.20 0.18																							
									○	○																					
vertical		TNGA	160408S-SE-6V	RE 0.8	a _p ▶ f _n ▶	0.06 0.06	0.13 0.13	0.20 0.20	○	○																					
									TNGA	160412S-SE-6V	RE 1.2	a _p ▶ f _n ▶	0.06 0.06	0.13 0.14	0.20 0.22	○	○														

UNIVERSAL	UE K H	TNGA	160404S-UE-6V	RE 0.4	a _p ▶ f _n ▶	0.07 0.08	0.16 0.14	0.25 0.20																						
									●	●	●																			
									vertical		TNGA	160408S-UE-6V	RE 0.8	a _p ▶ f _n ▶	0.07 0.08	0.16 0.15	0.25 0.22	●	●	●										
TNGA	160412S-UE-6V	RE 1.2	a _p ▶ f _n ▶	0.07 0.08	0.16 0.16	0.25 0.24	○	○										○												

UNIVERSAL	UE K H	TNGN	160408S-UE	RE 0.8	a _p ▶ f _n ▶	1.00 0.10	2.00 0.20	3.00 0.30															
solid, without hole		TNGN	160408S-UE	RE 0.8	a _p ▶ f _n ▶	1.00 0.10	2.00 0.20	3.00 0.30															

REINFORCED	RE H	TNGA	160404S-RE-6V	RE 0.4	a _p ▶ f _n ▶	0.08 0.08	0.17 0.14	0.26 0.20																						
									vertical		TNGA	160408S-RE-6V	RE 0.8	a _p ▶ f _n ▶	0.08 0.08	0.17 0.16	0.26 0.24					○								
TNGA	160412S-RE-6V	RE 1.2	a _p ▶ f _n ▶	0.08 0.08	0.17 0.17	0.26 0.26															○									

● stock standard, ○ non-standard stock

