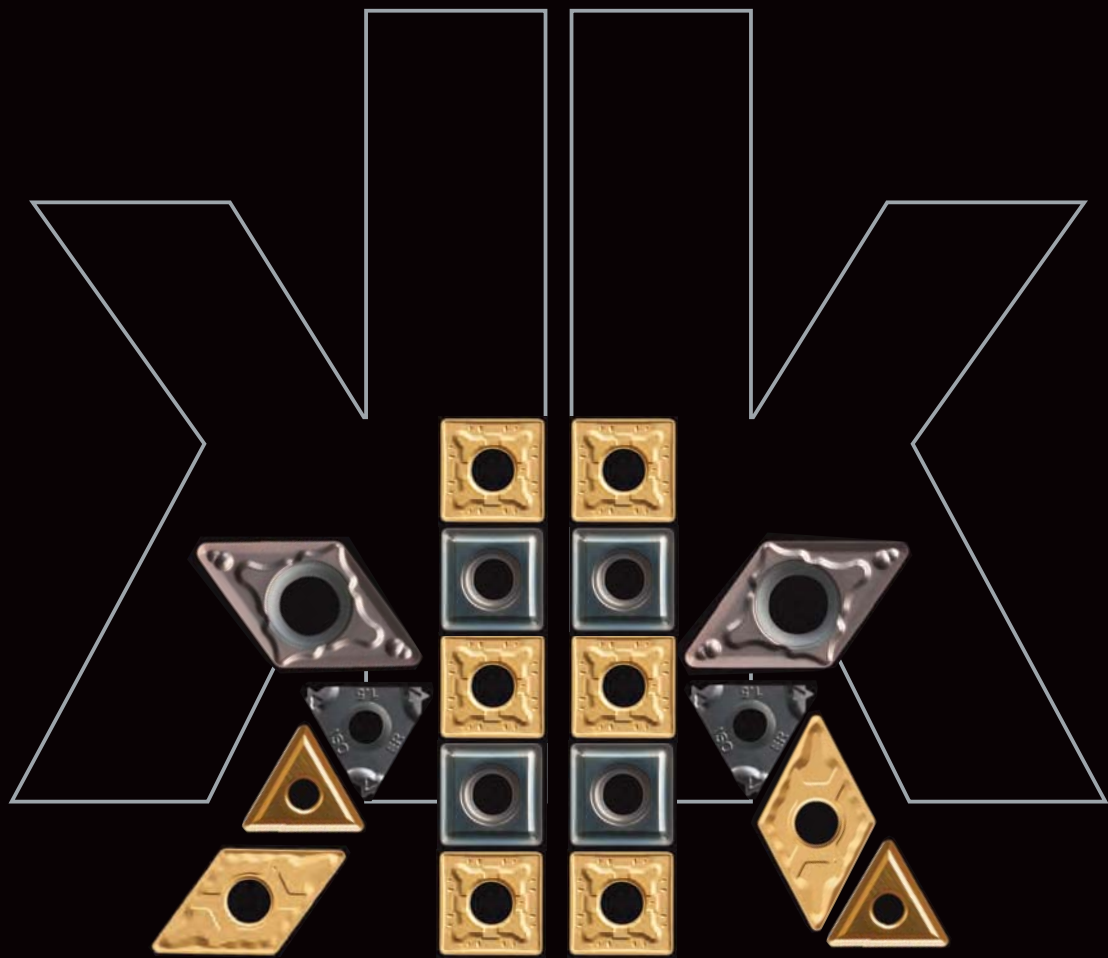


nikkoTOOLS

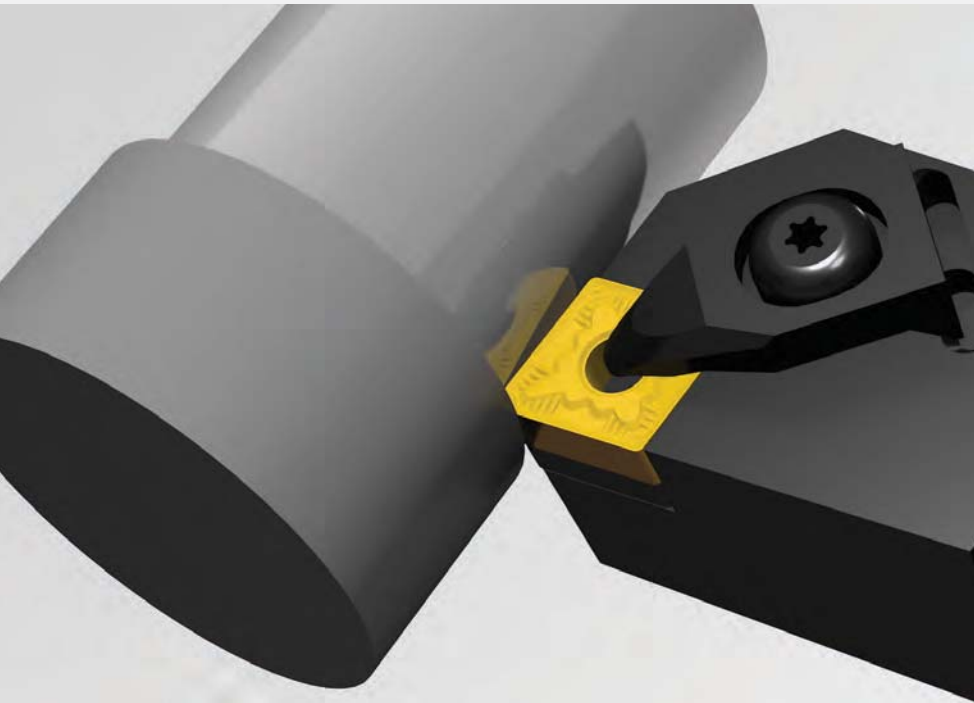


UPDATE **2019**

UPDATE 2019

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TURNING

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TURNING Carbide

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

CC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT				
	Size	IC	S	D1	AN		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020
	MICRO CC	3.50	1.40	1.90	7°		M			200 380	180 360	140 300	150 280	120 240	80 220	60 180					200 380
	0602□□	6.35	2.38	2.80	7°	K	180 380	150 300						80 170					160 280	160 300	
	09T3□□	9.525	3.97	4.40	7°	N										600 2200	600 2000	500 1500			
	1204□□	12.70	4.76	5.50	7°	S								40 80							
						H															
GRADE APPLICATION AREA	Stable machining, continuous cut					+															
main application	General machining, light interruption					-															
applicable	Unstable machining, interrupted cut					+															
FINISHING	GB P M N	MICRO CC.R01-GBL	RE 0.1	a _p ▶ 0.05 f _n ▶ 0.02	0.20 0.04	0.35 0.06									○						
		CC.R02-GBL	RE 0.2	a _p ▶ 0.05 f _n ▶ 0.03	0.20 0.05	0.35 0.07									●		●	○			
		CC.R04-GBL	RE 0.4	a _p ▶ 0.05 f _n ▶ 0.04	0.20 0.06	0.35 0.08									●		●	○			
	PPF P M	CCET 060202 [®] /L-PPF	RE 0.2	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.07	0.70 0.10									●					●	
		060204 [®] /L-PPF	RE 0.4	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.08	0.70 0.12									●					●	
		CCET 09T302 [®] /L-PPF	RE 0.2	a _p ▶ 0.10 f _n ▶ 0.04	0.50 0.08	0.90 0.12									●					●	
		09T304 [®] /L-PPF	RE 0.4	a _p ▶ 0.10 f _n ▶ 0.04	0.50 0.09	0.90 0.14									●					●	
	PFU P M S	CCMT 060202-PFU	RE 0.2	a _p ▶ 0.20 f _n ▶ 0.04	0.80 0.08	1.40 0.12				●	●		●	●	●					●	○
		060204-PFU	RE 0.4	a _p ▶ 0.20 f _n ▶ 0.05	0.80 0.11	1.40 0.17			●	●	●		●	●	●					●	●
		CCMT 09T302-PFU	RE 0.2	a _p ▶ 0.30 f _n ▶ 0.05	1.00 0.10	1.70 0.15				●	●		●	●	●					●	○
		09T304-PFU	RE 0.4	a _p ▶ 0.30 f _n ▶ 0.06	1.00 0.14	1.70 0.22			●	●	●		●	●	●					●	●
		09T308-PFU	RE 0.8	a _p ▶ 0.30 f _n ▶ 0.08	1.00 0.16	1.70 0.24				●	●		●	●	●					●	○
MEDIUM	PPM P M	CCET 09T304 [®] /L-PPM	RE 0.4	a _p ▶ 0.50 f _n ▶ 0.04	1.50 0.07	2.50 0.10									●				●		
		PMU P M K	CCMT 060202-PMU	RE 0.2	a _p ▶ 0.50 f _n ▶ 0.05	1.50 0.10	2.50 0.15				○	●		●						●	○
			060204-PMU	RE 0.4	a _p ▶ 0.50 f _n ▶ 0.06	1.50 0.13	2.50 0.20	●			●	●	●	●		●				●	●
	060208-PMU		RE 0.8	a _p ▶ 0.50 f _n ▶ 0.08	1.50 0.16	2.50 0.24	●		○	●	●		●							●	
	CCMT 09T302-PMU	RE 0.2	a _p ▶ 0.60 f _n ▶ 0.06	1.80 0.13	3.00 0.20				●	●		●							●	○	
	09T304-PMU	RE 0.4	a _p ▶ 0.60 f _n ▶ 0.07	1.80 0.16	3.00 0.25	●			●	●	●	●		●					●	●	
	09T308-PMU	RE 0.8	a _p ▶ 0.60 f _n ▶ 0.08	1.80 0.19	3.00 0.30	●	●		●	●	●	●		●					●	○	
	CCMT 120404-PMU	RE 0.4	a _p ▶ 0.80 f _n ▶ 0.08	2.20 0.17	3.60 0.26	●			●	●		●									
	120408-PMU	RE 0.8	a _p ▶ 0.80 f _n ▶ 0.10	2.20 0.22	3.60 0.32	●	○		●	●		●									
	120412-PMU	RE 1.2	a _p ▶ 0.80 f _n ▶ 0.12	2.20 0.24	3.60 0.36	●			○	○		○									

● stock standard, ○ non-standard stock



CC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT						
	Size	IC	S	D1	AN		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020		
<p>2 edges</p>	MICRO CC	3.50	1.40	1.90	7°	P			200 380	180 360	140 300			80 220	60 180					200 380	200 400		
	0602□□	6.35	2.38	2.80	7°	M						150 280	120 240	80 160	60 120					160 280	160 300		
	09T3□□	9.525	3.97	4.40	7°	K	180 380	150 300							80 170					200 400	200 420		
	1204□□	12.70	4.76	5.50	7°	N										600 2200	600 2000	500 1500					
							S								40 80								
						H																	
GRADE APPLICATION AREA	Stable machining, continuous cut																						
main application	General machining, light interruption																						
applicable	Unstable machining, interrupted cut																						
MEDIUM <p>polished surface</p>	CCGX	060202-PMN	RE 0.2	a _p ▶ 0.30 f _n ▶ 0.05	1.50 0.10	2.70 0.15																	
		060204-PMN	RE 0.4	a _p ▶ 0.30 f _n ▶ 0.06	1.50 0.13	2.70 0.20																	
		060208-PMN	RE 0.8	a _p ▶ 0.30 f _n ▶ 0.08	1.50 0.16	2.70 0.24																	
	CCGX	09T302-PMN	RE 0.2	a _p ▶ 0.50 f _n ▶ 0.06	2.00 0.11	3.50 0.16																	
		09T304-PMN	RE 0.4	a _p ▶ 0.50 f _n ▶ 0.08	2.00 0.16	3.50 0.24																	
		09T308-PMN	RE 0.8	a _p ▶ 0.50 f _n ▶ 0.10	2.00 0.20	3.50 0.30																	
	CCGX	120402-PMN	RE 0.2	a _p ▶ 0.50 f _n ▶ 0.08	3.00 0.14	5.50 0.20																	
		120404-PMN	RE 0.4	a _p ▶ 0.50 f _n ▶ 0.10	3.00 0.20	5.50 0.30																	
		120408-PMN	RE 0.8	a _p ▶ 0.50 f _n ▶ 0.15	3.00 0.25	5.50 0.35																	
	ROUGHING <p>reinforced edge</p>	CCMT	09T304-PRU	RE 0.4	a _p ▶ 1.50 f _n ▶ 0.10	2.50 0.19	3.50 0.28	●			●												
09T308-PRU			RE 0.8	a _p ▶ 1.50 f _n ▶ 0.12	2.50 0.22	3.50 0.32	●			●													
CCMT		120408-PRU	RE 0.8	a _p ▶ 1.50 f _n ▶ 0.14	3.00 0.26	4.50 0.38	●			●													
		120412-PRU	RE 1.2	a _p ▶ 1.50 f _n ▶ 0.16	3.00 0.28	4.50 0.40	●			●													

● stock standard, ○ non-standard stock



TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

CN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD		HW	HT		
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015
					P			200 380	180 360	140 300	100 240		80 220	60 180				200 380	
	MICRO CN	7.50	3.18	3.60	M						150 280	120 240	80 160	60 120	100 220	80 200		160 280	
	0903□□	9.525	3.18	3.81	K	180 380	150 300							80 170				200 400	
	1204□□	12.70	4.76	5.16	N													500 1500	
	1606□□	15.87	6.35	6.35	S									40 80					
	1906□□	19.05	6.35	7.94	H														
GRADE APPLICATION AREA	Stable machining, continuous cut																		
main application	General machining, light interruption																		
applicable	Unstable machining, interrupted cut																		

FINISHING	GB P M	MICRO CN.R04-GB [®] /L	RE 0.4	a _p ▶ 0.20 f _n ▶ 0.05	0.50 0.10	0.80 0.15	HC-CVD										HC-PVD		HW	HT			
							JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015			
	MICRONEGA , picture: right-hand	MICRO CN.R04-GB [®] /L	RE 0.4	a _p ▶ 0.20	0.50	0.80																	
				f _n ▶ 0.05	0.10	0.15																	
	NSP P	CNMG 090304-NSP	RE 0.4	a _p ▶ 0.30	0.70	1.10																	
				f _n ▶ 0.06	0.12	0.18																	
		CNMG 120404-NSP	RE 0.8	a _p ▶ 0.30	0.70	1.10																	
				f _n ▶ 0.08	0.16	0.24																	
CNMG 120408-NSP	RE 0.4	a _p ▶ 0.40	1.20	2.00																			
		f _n ▶ 0.08	0.15	0.22																			
CNMG 120408-NSP	RE 0.8	a _p ▶ 0.40	1.20	2.00																			
		f _n ▶ 0.10	0.22	0.34																			
	NFM M	CNMG 120404-NFM	RE 0.4	a _p ▶ 0.40	1.20	2.00																	
				f _n ▶ 0.08	0.14	0.20																	
	NFM M	CNMG 120408-NFM	RE 0.8	a _p ▶ 0.40	1.20	2.00																	
				f _n ▶ 0.10	0.20	0.30																	
	GM P M	MICRO CN.R04-GM	RE 0.4	a _p ▶ 0.80	1.60	2.40																	
				f _n ▶ 0.08	0.15	0.22																	
	MICRONEGA	CN.R08-GM	RE 0.8	a _p ▶ 0.80	1.60	2.40																	
				f _n ▶ 0.10	0.17	0.24																	
	SS M	MICRO CN.R02-SS	RE 0.2	a _p ▶ 0.40	1.20	2.00																	
				f _n ▶ 0.06	0.11	0.16																	
	MICRONEGA , polished surface	CN.R04-SS	RE 0.4	a _p ▶ 0.40	1.20	2.00																	
				f _n ▶ 0.08	0.14	0.20																	
	NMP P	CNMG 120404-NMP	RE 0.4	a _p ▶ 1.50	2.50	3.50																	
				f _n ▶ 0.12	0.20	0.28																	
				a _p ▶ 1.50	2.50	3.50																	
				f _n ▶ 0.16	0.25	0.34																	
		CNMG 120412-NMP	RE 1.2	a _p ▶ 1.50	2.50	3.50																	
				f _n ▶ 0.20	0.30	0.40																	
				a _p ▶ 1.50	2.50	3.50																	
				f _n ▶ 0.25	0.35	0.45																	
CNMG 160608-NMP	RE 0.8	a _p ▶ 3.00	4.50	6.00																			
		f _n ▶ 0.20	0.30	0.40																			
		a _p ▶ 3.00	4.50	6.00																			
		f _n ▶ 0.25	0.35	0.45																			
CNMG 160612-NMP	RE 1.2	a _p ▶ 3.00	4.50	6.00																			
		f _n ▶ 0.25	0.35	0.45																			
		a _p ▶ 3.00	4.50	6.00																			
		f _n ▶ 0.30	0.40	0.50																			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD		HW	HT			
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015
<p>4 edges</p>	MICRO CN	7.50	3.18	3.60	P			200 380	180 360	140 300	100 240			80 220	60 180					200 380
	0903□	9.525	3.18	3.81	M							150 280	120 240	80 160	60 120	100 220	80 200			160 280
	1204□	12.70	4.76	5.16	K	180 380	150 300									80 170				200 400
	1606□	15.87	6.35	6.35	N														500 1500	
	1906□	19.05	6.35	7.94	S										40 80					
						H														
GRADE APPLICATION AREA	Stable machining, continuous cut																			
main application	General machining, light interruption																			
applicable	Unstable machining, interrupted cut																			

MEDIUM	NMP P	CNMG 190612-NMP	RE 1.2	a _p ▶ f _n ▶	4.00 0.30	6.00 0.40	8.00 0.50	Application Matrix													
								JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015
		190616-NMP	RE 1.6	a _p ▶ f _n ▶	4.00 0.32	6.00 0.45	8.00 0.58														
	NUP P M	090304-NUP	RE 0.4	a _p ▶ f _n ▶	0.70 0.08	1.50 0.15	2.30 0.22														
		090308-NUP	RE 0.8	a _p ▶ f _n ▶	0.70 0.12	1.50 0.20	2.30 0.28														
		120404-NUP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	2.50 0.20	4.00 0.30														
		120408-NUP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35														
		120412-NUP	RE 1.2	a _p ▶ f _n ▶	1.00 0.18	2.50 0.30	4.00 0.42														
		120416-NUP	RE 1.6	a _p ▶ f _n ▶	1.00 0.20	2.50 0.35	4.00 0.50														
		160608-NUP	RE 0.8	a _p ▶ f _n ▶	2.00 0.18	4.50 0.30	7.00 0.42														
		160612-NUP	RE 1.2	a _p ▶ f _n ▶	2.00 0.22	4.50 0.35	7.00 0.48														
	190608-NUP	RE 0.8	a _p ▶ f _n ▶	3.00 0.22	6.00 0.35	9.00 0.48															
	190612-NUP	RE 1.2	a _p ▶ f _n ▶	3.00 0.25	6.00 0.40	9.00 0.55															
	190616-NUP	RE 1.6	a _p ▶ f _n ▶	3.00 0.30	6.00 0.45	9.00 0.60															
	NMU P	120408*/L-NMU	RE 0.8	a _p ▶ f _n ▶	1.00 0.20	2.50 0.30	4.00 0.40														
	NMM M	090304-NMM	RE 0.4	a _p ▶ f _n ▶	0.70 0.13	1.50 0.20	2.30 0.27														
		090308-NMM	RE 0.8	a _p ▶ f _n ▶	0.70 0.18	1.50 0.25	2.30 0.32														
		120404-NMM	RE 0.4	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35														
		120408-NMM	RE 0.8	a _p ▶ f _n ▶	1.00 0.20	2.50 0.30	4.00 0.40														
		120412-NMM	RE 1.2	a _p ▶ f _n ▶	1.00 0.25	2.50 0.35	4.00 0.45														
		120416-NMM	RE 1.6	a _p ▶ f _n ▶	1.00 0.30	2.50 0.40	4.00 0.50														
		160608-NMM	RE 0.8	a _p ▶ f _n ▶	2.00 0.25	4.50 0.35	7.00 0.45														
		160612-NMM	RE 1.2	a _p ▶ f _n ▶	2.00 0.30	4.50 0.40	7.00 0.50														
	160616-NMM	RE 1.6	a _p ▶ f _n ▶	2.00 0.35	4.50 0.45	7.00 0.55															

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

CN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD				HW	HT		
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015			JP9030	JU6020
	MICRO CN	7.50	3.18	3.60	M			200 380	180 360	140 300	100 240			80 220	60 180					200 380	
	0903□	9.525	3.18	3.81	K	180 380	150 300							80 160	60 120	100 220	80 200			160 280	
	1204□	12.70	4.76	5.16	N																200 400
	1606□	15.87	6.35	6.35	S										40 80						500 1500
	1906□	19.05	6.35	7.94	H																
	GRADE APPLICATION AREA	Stable machining, continuous cut																			
main application applicable	General machining, light interruption				+																
	Unstable machining, interrupted cut				-																

MEDIUM	NMM M	CNMG	190612-NMM	RE 1.2	a _p ▶ f _n ▶	3.00 0.35	6.00 0.45	9.00 0.55	Application Matrix															
									JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015		
	NMK K	CNMG	120404-NMK	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30	●	○														
			120408-NMK	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35	●	●														
			120412-NMK	RE 1.2	a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40	●	●														
			120416-NMK	RE 1.6	a _p ▶ f _n ▶	0.50 0.25	2.00 0.35	3.50 0.45	●	○														
		CNMG	160608-NMK	RE 0.8	a _p ▶ f _n ▶	2.00 0.25	4.00 0.35	6.00 0.45	●	○														
			160612-NMK	RE 1.2	a _p ▶ f _n ▶	2.00 0.30	4.00 0.40	6.00 0.50	●	○														
			160616-NMK	RE 1.6	a _p ▶ f _n ▶	2.00 0.35	4.00 0.45	6.00 0.55	●	○														
		CNMG	190612-NMK	RE 1.2	a _p ▶ f _n ▶	3.00 0.35	5.00 0.45	7.00 0.55	○	○														
			190616-NMK	RE 1.6	a _p ▶ f _n ▶	3.00 0.40	5.00 0.50	7.00 0.60	○	○														
			NMN N	CNGG	120404-NMN	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30												●		
120408-NMN	RE 0.8				a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35														●		
120412-NMN	RE 1.2				a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40															●	
	NRP P	CNMG	120408-NRP	RE 0.8	a _p ▶ f _n ▶	2.00 0.25	4.00 0.35	6.00 0.45		●	●	●	●											
			120412-NRP	RE 1.2	a _p ▶ f _n ▶	2.00 0.30	4.00 0.40	6.00 0.50		●	●	●	●											
			120416-NRP	RE 1.6	a _p ▶ f _n ▶	2.00 0.35	4.00 0.45	6.00 0.55		●	●	●	●											
		CNMG	160612-NRP	RE 1.2	a _p ▶ f _n ▶	4.00 0.35	6.00 0.50	8.00 0.65		●	●	●	●											
			160616-NRP	RE 1.6	a _p ▶ f _n ▶	4.00 0.40	6.00 0.55	8.00 0.70		●	●	●	●											

● stock standard, ○ non-standard stock



CN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD		HW	HT			
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015
	MICRO CN	7.50	3.18	3.60	M			200 380	180 360	140 300	100 240			80 220	60 180					200 380
	0903□	9.525	3.18	3.81	K	180 380	150 300								60 120 170	100 220	80 200			160 280 200 400
	1204□	12.70	4.76	5.16	N														500 1500	
	1606□	15.87	6.35	6.35	S										40 80					
	1906□	19.05	6.35	7.94	H															
	GRADE APPLICATION AREA	Stable machining, continuous cut																		
■ main application	General machining, light interruption				+															
■ applicable	Unstable machining, interrupted cut				-															

ROUGHING	NRP P	CNMG	190612-NRP	RE 1.2	a _p ▶ f _n ▶	6.00 0.40	8.00 0.55	10.0 0.70														
			190616-NRP	RE 1.6	a _p ▶ f _n ▶	6.00 0.45	8.00 0.60	10.0 0.75														
			190624-NRP	RE 2.4	a _p ▶ f _n ▶	6.00 0.50	8.00 0.65	10.0 0.80														
	NTP P	CNMG	160612-NTP	RE 1.2	a _p ▶ f _n ▶	5.00 0.40	7.00 0.55	9.00 0.70				▽										
		CNMG	190612-NTP	RE 1.2	a _p ▶ f _n ▶	7.00 0.45	9.00 0.60	11.0 0.75				▽	▽									
			190616-NTP	RE 1.6	a _p ▶ f _n ▶	7.00 0.50	9.00 0.65	11.0 0.80				▽	▽									
	NRK K	CNMG	120408-NRK	RE 0.8	a _p ▶ f _n ▶	1.50 0.20	4.00 0.30	6.50 0.40	●	●												
			120412-NRK	RE 1.2	a _p ▶ f _n ▶	1.50 0.25	4.00 0.35	6.50 0.45	●	●												
			120416-NRK	RE 1.6	a _p ▶ f _n ▶	1.50 0.30	4.00 0.40	6.50 0.50	●	●												
		CNMG	160612-NRK	RE 1.2	a _p ▶ f _n ▶	3.00 0.40	6.00 0.55	9.00 0.70	●	●												
			160616-NRK	RE 1.6	a _p ▶ f _n ▶	3.00 0.45	6.00 0.60	9.00 0.75	●	●												
		CNMG	190612-NRK	RE 1.2	a _p ▶ f _n ▶	5.00 0.45	8.00 0.60	11.0 0.75	○	○												
			190616-NRK	RE 1.6	a _p ▶ f _n ▶	5.00 0.50	8.00 0.65	11.0 0.80	○	○												
	Flat K	CNMA	120404	RE 0.4	a _p ▶ f _n ▶	2.00 0.15	4.00 0.25	6.00 0.35	○	○												
			120408	RE 0.8	a _p ▶ f _n ▶	2.00 0.25	4.00 0.35	6.00 0.45	●	○												
			120412	RE 1.2	a _p ▶ f _n ▶	2.00 0.35	4.00 0.45	6.00 0.55	●	○												
			120416	RE 1.6	a _p ▶ f _n ▶	2.00 0.45	4.00 0.55	6.00 0.65	○	○												
		CNMA	160612	RE 1.2	a _p ▶ f _n ▶	4.00 0.45	7.00 0.60	10.0 0.75	●	○												
			160616	RE 1.6	a _p ▶ f _n ▶	4.00 0.50	7.00 0.65	10.0 0.80	●	○												
		CNMA	190612	RE 1.2	a _p ▶ f _n ▶	6.00 0.50	9.00 0.65	12.0 0.80	○	○												
			190616	RE 1.6	a _p ▶ f _n ▶	6.00 0.55	9.00 0.70	12.0 0.85	●	○												
	HEAVY ROUGHING	MRP P	190616-MRP	RE 1.6	a _p ▶ f _n ▶	6.00 0.60	9.00 0.75	12.0 0.90														
			190624-MRP	RE 2.4	a _p ▶ f _n ▶	6.00 0.65	9.00 0.80	12.0 0.95														
		CNMM	250924-MRP	RE 2.4	a _p ▶ f _n ▶	8.00 0.70	12.0 0.85	16.0 1.00														

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

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ACCESSORIES

DC	CARBIDE Positive					ISO513	HC-CVD					HC-PVD		HW		HT								
	Size	IC	S	D1	AN		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020				
<p>2 edges</p>						P			200 380	180 360	140 300		80 220	60 180				200 380	200 400					
	0702□	6.35	2.38	2.80	7°	M					150 280	120 240	80 160	60 120				160 280	160 300					
	11T3□	9.525	3.97	4.40	7°	K	180 380	150 300						80 170				200 400	200 420					
	1504□	12.70	4.76	5.50	7°	N									600 2200	600 2000	500 1500							
						S							40 80											
						H																		
GRADE APPLICATION AREA		Stable machining, continuous cut			+																			
main application		General machining, light interruption			Hardness																			
applicable		Unstable machining, interrupted cut			Toughness																			
PPF P M <p>ground chipbreaker, picture: right-hand</p>	DCET	07020 ² /L-PPF	RE 0.2	a _p 0.10 f _n 0.04	0.40 0.07	0.70 0.10																		
			07020 ⁴ /L-PPF	RE 0.4	a _p 0.10 f _n 0.04	0.40 0.08	0.70 0.12																	
	DCET	11T30 ² /L-PPF	RE 0.2	a _p 0.10 f _n 0.04	0.50 0.08	0.90 0.12																		
			11T30 ⁴ /L-PPF	RE 0.4	a _p 0.10 f _n 0.04	0.50 0.09	0.90 0.14																	
	PFU P M S <p>sharp edge</p>	DCMT	07020 ² -PFU	RE 0.2	a _p 0.20 f _n 0.04	0.80 0.08	1.40 0.12			●	●		●	●	●						●	○		
				07020 ⁴ -PFU	RE 0.4	a _p 0.20 f _n 0.05	0.80 0.11	1.40 0.17			●	●		●	●	●						●	●	
		DCMT	11T30 ² -PFU	RE 0.2	a _p 0.30 f _n 0.05	1.00 0.10	1.70 0.15			●	●		●	●	●						●	○		
				11T30 ⁴ -PFU	RE 0.4	a _p 0.30 f _n 0.06	1.00 0.14	1.70 0.22			●	●	●	●	●	●						●	●	
			11T30 ⁸ -PFU	RE 0.8	a _p 0.30 f _n 0.08	1.00 0.16	1.70 0.24			●	●	●	●	●	●						●	○		
PPM P M <p>ground chipbreaker, picture: right-hand</p>	DCET	07020 ⁴ /L-PPM	RE 0.4	a _p 0.40 f _n 0.03	1.00 0.06	1.60 0.09																		
	DCET	11T30 ² /L-PPM	RE 0.2	a _p 0.50 f _n 0.04	1.50 0.06	2.50 0.08																		
			11T30 ⁴ /L-PPM	RE 0.4	a _p 0.50 f _n 0.04	1.50 0.07	2.50 0.10																	
PMU P M K <p>general purpose</p>	DCMT	07020 ² -PMU	RE 0.2	a _p 0.50 f _n 0.05	1.50 0.10	2.50 0.15			●	●		○								●	○			
			07020 ⁴ -PMU	RE 0.4	a _p 0.50 f _n 0.06	1.50 0.13	2.50 0.20	●		●	●	●	●	●							●	●		
			07020 ⁸ -PMU	RE 0.8	a _p 0.50 f _n 0.08	1.50 0.16	2.50 0.24	●		○	●		○								●			
	DCMT	11T30 ² -PMU	RE 0.2	a _p 0.60 f _n 0.06	1.80 0.13	3.00 0.20			●	●		●	●								●	○		
			11T30 ⁴ -PMU	RE 0.4	a _p 0.60 f _n 0.07	1.80 0.16	3.00 0.25	●		●	●	●	●	●							●	●		
			11T30 ⁸ -PMU	RE 0.8	a _p 0.60 f _n 0.08	1.80 0.19	3.00 0.30	●		●	●	●	●	●							●	○		
	DCMT	15040 ⁴ -PMU	RE 0.4	a _p 0.80 f _n 0.08	2.20 0.17	3.60 0.26			○		●													
		15040 ⁸ -PMU	RE 0.8	a _p 0.80 f _n 0.10	2.20 0.22	3.60 0.32			○		●	●	●											
		15041 ² -PMU	RE 1.2	a _p 0.80 f _n 0.12	2.20 0.24	3.60 0.36				●		○												
PMN N <p>polished surface</p>	DCGX	07020 ² -PMN	RE 0.2	a _p 0.30 f _n 0.05	1.50 0.10	2.70 0.15														●				
			07020 ⁴ -PMN	RE 0.4	a _p 0.30 f _n 0.06	1.50 0.13	2.70 0.20														○	○	●	
			07020 ⁸ -PMN	RE 0.8	a _p 0.30 f _n 0.08	1.50 0.16	2.70 0.24														○	○	●	
	DCGX	11T30 ² -PMN	RE 0.2	a _p 0.50 f _n 0.06	2.00 0.11	3.50 0.16															○	●		
			11T30 ⁴ -PMN	RE 0.4	a _p 0.50 f _n 0.08	2.00 0.16	3.50 0.24															●	●	●
			11T30 ⁸ -PMN	RE 0.8	a _p 0.50 f _n 0.10	2.00 0.20	3.50 0.30															●	●	●

● stock standard, ○ non-standard stock

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DC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT		
	Size	IC	S	D1	AN		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015
<p>2 edges</p>						P			200 380	180 360	140 300		80 220	60 180				200 380	200 400
	0702 □□	6.35	2.38	2.80	7°	M					150 280	120 240	80 160	60 120				160 280	160 300
	11T3 □□	9.525	3.97	4.40	7°	K	180 380	150 300						80 170				200 400	200 420
	1504 □□	12.70	4.76	5.50	7°	N									600 2200	600 2000	500 1500		
						S								40 80					
						H													
GRADE APPLICATION AREA	Stable machining, continuous cut					+	○	■	■	■	■	■	■	■	■	■	■	■	■
■ main application	General machining, light interruption					-	○	■	■	■	■	■	■	■	■	■	■	■	■
■ applicable	Unstable machining, interrupted cut					+	○	■	■	■	■	■	■	■	■	■	■	■	■
ROUGHING	<p>reinforced edge</p>	DCMT	11T304-PRU	RE 0.4	a_p ▶ 1.50 f_n ▶ 0.10	2.50 0.19	3.50 0.28	●											
			11T308-PRU	RE 0.8	a_p ▶ 1.50 f_n ▶ 0.12	2.50 0.22	3.50 0.32	●											

● stock standard

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ACCESSORIES

DN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD		HW	HT		
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JU6020	JU4015
					P			200 380	180 360	140 300	100 240		80 220	60 180				200 380	
	MICRO DN	7.00	3.18	3.60	M						150 280	120 240	80 160	60 120	100 220	80 200		160 280	
	1104□	9.525	4.76	3.81	K	180 380	150 300								80 170			200 400	
	1506□	12.70	6.35	5.16	N													500 1500	
					S									40 80					
				H															
GRADE APPLICATION AREA	Stable machining, continuous cut				+														
main application	General machining, light interruption				-														
applicable	Unstable machining, interrupted cut				+														

MEDIUM	NMP P	DNMG	110404-NMP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	1.50 0.15	2.00 0.20	Application											
									JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030
			110408-NMP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	1.50 0.20	2.00 0.25	●			●	●							
			150604-NMP	RE 0.4	a _p ▶ f _n ▶	1.50 0.12	2.50 0.20	3.50 0.28				●	●							
			150608-NMP	RE 0.8	a _p ▶ f _n ▶	1.50 0.16	2.50 0.25	3.50 0.34				●	●							
			150612-NMP	RE 1.2	a _p ▶ f _n ▶	1.50 0.20	2.50 0.30	3.50 0.40				●	●							
			150616-NMP	RE 1.6	a _p ▶ f _n ▶	1.50 0.25	2.50 0.35	3.50 0.45				●	●							
			110404-NUP	RE 0.4	a _p ▶ f _n ▶	0.70 0.08	1.50 0.15	2.30 0.22				●	●						●	
			110408-NUP	RE 0.8	a _p ▶ f _n ▶	0.70 0.12	1.50 0.20	2.30 0.28				●	●						●	
			110412-NUP	RE 1.2	a _p ▶ f _n ▶	0.70 0.15	1.50 0.25	2.30 0.35				●	●							
			150604-NUP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	2.50 0.20	4.00 0.30			●	●	●		●				●	
			150608-NUP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35			●	●	●		●				●	
			150612-NUP	RE 1.2	a _p ▶ f _n ▶	1.00 0.18	2.50 0.30	4.00 0.42			●	●	●		●					
			110404-NMM	RE 0.4	a _p ▶ f _n ▶	0.70 0.13	1.50 0.20	2.30 0.27					●			○				
			110408-NMM	RE 0.8	a _p ▶ f _n ▶	0.70 0.18	1.50 0.25	2.30 0.32					●			●				
			150604-NMM	RE 0.4	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35					●			●				
			150608-NMM	RE 0.8	a _p ▶ f _n ▶	1.00 0.20	2.50 0.30	4.00 0.40				●	●		●					
			150612-NMM	RE 1.2	a _p ▶ f _n ▶	1.00 0.25	2.50 0.35	4.00 0.45				●	●		●					
			150604-NMK	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30	●	○										
			150608-NMK	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35	●	○										
			150612-NMK	RE 1.2	a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40	○	○										
			150604-NMN	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30										●		
			150608-NMN	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35										●		

● stock standard, ○ non-standard stock



TURNING

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ACCESSORIES

DN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD				HW	HT		
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP5015	JP5025	JP9015	JP9030	JW6020	JW4015		
	MICRO DN	7.00	3.18	3.60		P			200 380	180 360	140 300	100 240		80 220	60 180					200 380	
	1104□	9.525	4.76	3.81	M						150 280	120 240	80 160	60 120	100 220	80 200			160 280		
	1506□	12.70	6.35	5.16	K	180 380	150 300							80 170					200 400		
					N													500 1500			
					S								40 80								
					H																
GRADE APPLICATION AREA		Stable machining, continuous cut			+																
main application		General machining, light interruption			-																
applicable		Unstable machining, interrupted cut			+																
ROUGHING	NRP P 	DNMG 150608-NRP	RE 0.8	a_p ▶ 2.00 f_n ▶ 0.25	4.00 0.35	6.00 0.45															
		150612-NRP	RE 1.2	a_p ▶ 2.00 f_n ▶ 0.30	4.00 0.40	6.00 0.50															
		150616-NRP	RE 1.6	a_p ▶ 2.00 f_n ▶ 0.35	4.00 0.45	6.00 0.55															
	NTP P 	DNMG 150612-NTP	RE 1.2	a_p ▶ 3.00 f_n ▶ 0.35	5.00 0.45	7.00 0.55					▽										
	NRK K 	DNMG 150608-NRK	RE 0.8	a_p ▶ 1.50 f_n ▶ 0.20	4.00 0.30	6.50 0.40	●	○													
		150612-NRK	RE 1.2	a_p ▶ 1.50 f_n ▶ 0.25	4.00 0.35	6.50 0.45	●	○													
	Flat K 	DNMA 150608	RE 0.8	a_p ▶ 2.00 f_n ▶ 0.25	4.00 0.35	6.00 0.45	●	○													
		150612	RE 1.2	a_p ▶ 2.00 f_n ▶ 0.35	4.00 0.45	6.00 0.55	●	○													

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

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ACCESSORIES

SC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT				
	Size	IC	S	D1	AN		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020	
<p>4 edges</p>						P			200 380	180 360	140 300		80 220	60 180					200 380	200 400	
	09T3 □□	9.525	3.97	4.40	7°	M					150 280	120 240	80 160	60 120					160 280	160 300	
	1204 □□	12.70	4.76	5.50	7°	K	180 380	150 300						80 170					200 400	200 420	
						N									600 2200	600 2000	500 1500				
						S								40 80							
					H																
GRADE APPLICATION AREA	Stable machining, continuous cut																				
main application	General machining, light interruption																				
applicable	Unstable machining, interrupted cut																				
MEDIUM	 general purpose	SCMT	09T304-PMU	RE 0.4	$a_p \triangleright$ 0.60 $f_n \triangleright$ 0.07	1.80 0.16	3.00 0.25	○		●	●	○	●						●		
			09T308-PMU	RE 0.8	$a_p \triangleright$ 0.60 $f_n \triangleright$ 0.08	1.80 0.19	3.00 0.30	●		●	●	●								○	
		SCMT	120404-PMU	RE 0.4	$a_p \triangleright$ 0.80 $f_n \triangleright$ 0.08	2.20 0.17	3.60 0.26				○	●									
			120408-PMU	RE 0.8	$a_p \triangleright$ 0.80 $f_n \triangleright$ 0.10	2.20 0.22	3.60 0.32	●		●	●	●									
	 polished surface	SCGX	09T304-PMN	RE 0.4	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.08	2.00 0.16	3.50 0.24								○	○	●				
			09T308-PMN	RE 0.8	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.10	2.00 0.20	3.50 0.30									○	○	●			
		SCGX	120404-PMN	RE 0.4	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.10	3.00 0.20	5.50 0.30									○	○	●			
			120408-PMN	RE 0.8	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.15	3.00 0.25	5.50 0.35									○	○	●			
ROUGHING	 reinforced edge	SCMT	09T308-PRU	RE 0.8	$a_p \triangleright$ 1.50 $f_n \triangleright$ 0.12	2.50 0.22	3.50 0.32	●			●										
		SCMT	120408-PRU	RE 0.8	$a_p \triangleright$ 1.50 $f_n \triangleright$ 0.14	3.00 0.26	4.50 0.38	●			●										

● stock standard, ○ non-standard stock



SN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT	
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015
<p>8 edges</p>					P			200 380	180 360	140 300	100 240						200 380
	0903 □	9.525	3.18	3.81	M						150 280	120 240	100 220	80 200			160 280
	1204 □	12.70	4.76	5.16	K	180 380	150 300										200 400
	1906 □	19.05	6.35	7.94	N											500 1500	
	2509 □	25.40	9.52	8.80	S												
						H											
GRADE APPLICATION AREA	Stable machining, continuous cut																
main application	General machining, light interruption																
applicable	Unstable machining, interrupted cut																

	NSP P	SNMG	120404-NSP	RE 0.4	a _p ▶ 0.40 f _n ▶ 0.08	1.20 0.15	2.00 0.22															
FINISHING		SNMG	120404-NSP	RE 0.4	a _p ▶ 0.40 f _n ▶ 0.06	1.50 0.12	2.50 0.18															
		SNMG	120404-NFP	RE 0.4	a _p ▶ 0.50 f _n ▶ 0.06	1.50 0.12	2.50 0.18			▽	▽											
		SNMG	120404-NFM	RE 0.4	a _p ▶ 0.40 f _n ▶ 0.08	1.20 0.14	2.00 0.20							●								
	SNMG	120404-NMP	RE 0.4	a _p ▶ 1.50 f _n ▶ 0.12	2.50 0.20	3.50 0.28			●	●												
MEDIUM		SNMG	120404-NUP	RE 0.4	a _p ▶ 1.00 f _n ▶ 0.10	2.50 0.30	4.00 0.30			○	○											
	SNMG	120408-NMP	RE 0.8	a _p ▶ 1.50 f _n ▶ 0.16	2.50 0.25	3.50 0.34			●	●												
	SNMG	120412-NUP	RE 1.2	a _p ▶ 1.50 f _n ▶ 0.20	2.50 0.30	3.50 0.40			●	●												
	SNMG	120416-NUP	RE 1.6	a _p ▶ 1.50 f _n ▶ 0.25	2.50 0.35	3.50 0.45			○	○												
	SNMG	120408-NUP	RE 0.8	a _p ▶ 1.00 f _n ▶ 0.15	2.50 0.25	4.00 0.35			○	●												
	SNMG	120412-NUP	RE 1.2	a _p ▶ 1.00 f _n ▶ 0.18	2.50 0.30	4.00 0.42			○	●												
	SNMG	120416-NUP	RE 1.6	a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.35	4.00 0.50			○	○												
	SNMG	120408/L-NMU	RE 0.8	a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.30	4.00 0.40				○												
	SNMG	120404-NMM	RE 0.4	a _p ▶ 1.00 f _n ▶ 0.15	2.50 0.25	4.00 0.35							●	○								
	SNMG	120408-NMM	RE 0.8	a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.30	4.00 0.40							●	○								
	SNMG	120412-NMM	RE 1.2	a _p ▶ 1.00 f _n ▶ 0.25	2.50 0.35	4.00 0.45							○	○								
	SNMG	120416-NMM	RE 1.6	a _p ▶ 1.00 f _n ▶ 0.30	2.50 0.40	4.00 0.50							○	○								

● stock standard, ○ non-standard stock, ▽ stock exhaustion



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SN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT		
	Size	IC	S	D1		JC7010	JC7020	JCS005	JCS015	JCS025	JCS035	JCS010	JCS025	JP9015	JP9030	JU6020	JU4015	
<p>8 edges</p>					P			200 380	180 360	140 300	100 240						200 380	
	0903 □	9.525	3.18	3.81	M						150 280	120 240	100 220	80 200			160 280	
	1204 □	12.70	4.76	5.16	K	180 380	150 300										200 400	
	1906 □	19.05	6.35	7.94	N											500 1500		
	2509 □	25.40	9.52	8.80	S													
						H												
GRADE APPLICATION AREA	Stable machining, continuous cut				+													
main application	General machining, light interruption				-													
applicable	Unstable machining, interrupted cut				+													
MEDIUM		SNMG 190612-NMM	RE 1.2	a_p 3.00 f_n 0.35	6.00 0.45	9.00 0.55							○	○				
			RE 1.6	a_p 3.00 f_n 0.40	6.00 0.50	9.00 0.60					○	○						
		SNMG 120408-NMK	RE 0.8	a_p 0.50 f_n 0.15	2.00 0.25	3.50 0.35	●	○										
			RE 1.2	a_p 0.50 f_n 0.20	2.00 0.30	3.50 0.40	●	○										
	<p>polished surface</p>	SNGG 120404-NMN	RE 0.4	a_p 0.50 f_n 0.10	2.00 0.20	3.50 0.30										●		
			RE 0.8	a_p 0.50 f_n 0.15	2.00 0.25	3.50 0.35											●	
			RE 1.2	a_p 0.50 f_n 0.20	2.00 0.30	3.50 0.40											●	
		SNMG 120408-NRP	RE 0.8	a_p 2.00 f_n 0.25	4.00 0.35	6.00 0.45				●	●							
			RE 1.2	a_p 2.00 f_n 0.30	4.00 0.40	6.00 0.50				●	●							
			RE 1.6	a_p 2.00 f_n 0.35	4.00 0.45	6.00 0.55				●	●							
		SNMG 190612-NRP	RE 1.2	a_p 6.00 f_n 0.40	8.00 0.55	10.0 0.70				○	○							
			RE 1.6	a_p 6.00 f_n 0.45	8.00 0.60	10.0 0.75				●	●							
RE 2.4			a_p 6.00 f_n 0.50	8.00 0.65	10.0 0.80				●	●								
	SNMG 120408-NTP	RE 0.8	a_p 3.00 f_n 0.30	5.00 0.40	7.00 0.50				▽	▽								
		RE 1.2	a_p 3.00 f_n 0.35	5.00 0.45	7.00 0.55				▽	▽								
	SNMG 120408-NRK	RE 0.8	a_p 1.50 f_n 0.20	4.00 0.30	6.50 0.40	●	○											
		RE 1.2	a_p 1.50 f_n 0.25	4.00 0.35	6.50 0.45	●	○											
		RE 1.6	a_p 1.50 f_n 0.30	4.00 0.40	6.50 0.50	●	●											
	SNMG 190612-NRK	RE 1.2	a_p 5.00 f_n 0.45	8.00 0.60	11.0 0.75				○	○								
		RE 1.6	a_p 5.00 f_n 0.50	8.00 0.65	11.0 0.80				○	○								

● stock standard, ○ non-standard stock, ▽ stock exhaustion



SN		CARBIDE Negative				ISO513	HC-CVD								HW	HT		
		Size	IC	S	D1		JC7010	JC7020	JCS005	JCS015	JCS025	JCS035	JCS010	JCS025			JPS015	JPS030
<p>8 edges</p>					P													
	0903 □	9.525	3.18	3.81		M			200 380	180 360	140 300	100 240				200 380		
	1204 □	12.70	4.76	5.16		K	180 380	150 300				150 280	120 240	100 220	80 200	160 280		
	1906 □	19.05	6.35	7.94		N										500 1500		
	2509 □	25.40	9.52	8.80		S												
						H												
GRADE APPLICATION AREA		Stable machining, continuous cut																
main application		General machining, light interruption																
applicable		Unstable machining, interrupted cut																
ROUGHING	Flat K 	SNMA 090308	RE 0.8	a_p 1.00 f_n 0.22	2.00 0.30	3.00 0.38	○											
		SNMA 120408	RE 0.8	a_p 2.00 f_n 0.25	4.00 0.35	6.00 0.45	●	○										
				a_p 2.00 f_n 0.35	4.00 0.45	6.00 0.55	●	○										
		SNMA 120416	RE 1.6	a_p 2.00 f_n 0.45	4.00 0.55	6.00 0.65	●	○										
HEAVY ROUGHING	MRP P 4 edges, single side	SNMM 190616-MRP	RE 1.6	a_p 6.00 f_n 0.60	9.00 0.75	12.0 0.90			○	○								
				a_p 6.00 f_n 0.65	9.00 0.80	12.0 0.95			●	●								
		SNMM 250924-MRP	RE 2.4	a_p 8.00 f_n 0.70	12.0 0.85	16.0 1.00			●	●								

● stock standard, ○ non-standard stock



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TC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT					
	Size	IC	S	D1	AN		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020	
	<p>3 edges</p>	0902□	5.56	2.38	2.50		7°	M			200 380	180 360	140 300		150 280	120 240	80 160	60 120				200 380
	1102□	6.35	2.38	2.80	7°	K	180 380	150 300							80 170					160 280	160 300	
	16T3□	9.525	3.97	4.40	7°	N										600 2200	600 2000	500 1500			200 400	200 420
	2204□	12.70	4.76	5.50	7°	S									40 80							
						H																
GRADE APPLICATION AREA	Stable machining, continuous cut																					
main application	General machining, light interruption					+																
applicable	Unstable machining, interrupted cut					-																

FINISHING	PFU P M S	TCMT 110202-PFU	RE 0.2	a _p 0.20 f _n 0.04	0.80 0.08	1.40 0.12																				
		110204-PFU	RE 0.4	a _p 0.20 f _n 0.05	0.80 0.11	1.40 0.17																				
MEDIUM	PMU P M K	TCMT 090204-PMU	RE 0.4	a _p 0.50 f _n 0.05	1.00 0.09	1.50 0.13																				
		TCMT 110202-PMU	RE 0.2	a _p 0.50 f _n 0.05	1.50 0.10	2.50 0.15																				
		110204-PMU	RE 0.4	a _p 0.50 f _n 0.06	1.50 0.13	2.50 0.20																				
		110208-PMU	RE 0.8	a _p 0.50 f _n 0.08	1.50 0.16	2.50 0.24																				
		TCMT 16T304-PMU	RE 0.4	a _p 0.60 f _n 0.07	1.80 0.16	3.00 0.25																				
		16T308-PMU	RE 0.8	a _p 0.60 f _n 0.08	1.80 0.19	3.00 0.30																				
		16T312-PMU	RE 1.2	a _p 0.60 f _n 0.10	1.80 0.22	3.00 0.34																				
		TCMT 220408-PMU	RE 0.8	a _p 0.80 f _n 0.10	2.20 0.22	3.60 0.32																				
ROUGHING	PMN TV	TCGX 090204-PMN	RE 0.4	a _p 0.30 f _n 0.05	1.00 0.11	1.70 0.17																				
		TCGX 110202-PMN	RE 0.2	a _p 0.30 f _n 0.05	1.50 0.10	2.70 0.15																				
		110204-PMN	RE 0.4	a _p 0.30 f _n 0.06	1.50 0.13	2.70 0.20																				
		110208-PMN	RE 0.8	a _p 0.30 f _n 0.08	1.50 0.16	2.70 0.24																				
		TCGX 16T302-PMN	RE 0.2	a _p 0.50 f _n 0.06	2.00 0.11	3.50 0.16																				
		16T304-PMN	RE 0.4	a _p 0.50 f _n 0.08	2.00 0.16	3.50 0.24																				
		16T308-PMN	RE 0.8	a _p 0.50 f _n 0.10	2.00 0.20	3.50 0.30																				
ROUGHING	PRU P K	TCMT 16T304-PRU	RE 0.4	a _p 1.50 f _n 0.10	2.50 0.19	3.50 0.28																				
		16T308-PRU	RE 0.8	a _p 1.50 f _n 0.12	2.50 0.22	3.50 0.32																				

● stock standard, ○ non-standard stock, ▽ stock exhaustion



<h1>TN</h1> <p>6 edges</p>	CARBIDE Negative				ISO513	HC-CVD								HW	HT					
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010			JC9025	JP9015	JP9030	JU6020	JU4015
	1604□	9.525	4.76	3.81		M			200 380	180 360	140 300	100 240				150 280	120 240	100 220	80 200	
	2204□	12.70	4.76	5.16	K	180 380	150 300										200 400	200 400		
					N												500 1500			
					S															
					H															
GRADE APPLICATION AREA	Stable machining, continuous cut				+															
main application	General machining, light interruption				-															
applicable	Unstable machining, interrupted cut				+															

FINISHING	NSP P		TNMG	160404-NSP	RE 0.4	a_p 0.40 f_n 0.08	1.20 0.15	2.00 0.22												
									160408-NSP	RE 0.8	a_p 0.40 f_n 0.10	1.20 0.22	2.00 0.34							
FINISHING	NFP P		TNMG	160408-NFP	RE 0.8	a_p 0.50 f_n 0.08	1.50 0.17	2.50 0.26												
	NFM M		TNMG	160404-NFM	RE 0.4	a_p 0.40 f_n 0.08	1.20 0.14	2.00 0.20												
									160408-NFM	RE 0.8	a_p 0.40 f_n 0.10	1.20 0.20	2.00 0.30							
MEDIUM	NMP P		TNMG	160404-NMP	RE 0.4	a_p 1.50 f_n 0.12	2.50 0.20	3.50 0.28												
									160408-NMP	RE 0.8	a_p 1.50 f_n 0.16	2.50 0.25	3.50 0.34							
				160412-NMP	RE 1.2	a_p 1.50 f_n 0.20	2.50 0.30	3.50 0.40												
	NUP P M		TNMG	160404-NUP	RE 0.4	a_p 1.00 f_n 0.10	2.50 0.20	4.00 0.30												
									160408-NUP	RE 0.8	a_p 1.00 f_n 0.15	2.50 0.25	4.00 0.35							
				160412-NUP	RE 1.2	a_p 1.00 f_n 0.18	2.50 0.30	4.00 0.42												
MEDIUM		TNMG	220408-NUP	RE 0.8	a_p 2.00 f_n 0.18	4.50 0.30	7.00 0.42													
								220412-NUP	RE 1.2	a_p 2.00 f_n 0.22	4.50 0.35	7.00 0.48								
			220416-NUP	RE 1.6	a_p 2.00 f_n 0.24	4.50 0.40	7.00 0.56													
MEDIUM	NMP P		TNMG	160404-NMP	RE 0.4	a_p 1.00 f_n 0.15	2.50 0.25	4.00 0.35												
									160408-NMP	RE 0.8	a_p 1.00 f_n 0.20	2.50 0.30	4.00 0.40							

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

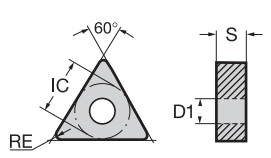
THREADING






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TN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT			
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015	
		1604 □	9.525	4.76		3.81	M			200 380	180 360	140 300	100 240			150 280	120 240	100 220	80 200
	2204 □	12.70	4.76	5.16	K	180 380	150 300											200 400	500 1500
6 edges					N														
					S														
					H														
GRADE APPLICATION AREA	Stable machining, continuous cut																		
main application	General machining, light interruption																		
applicable	Unstable machining, interrupted cut																		

MEDIUM	NMM M	TNMG	Size	RE	a _p	f _n	V _c	ISO513		Application															
								2.50	4.00	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015				
	TNMG	160404-NMM	RE 0.4	0.4	0.15	2.50	4.00															▽			
			RE 0.8	0.8	0.20	2.50	4.00																▽		
			RE 1.2	1.2	0.25	2.50	4.00																		
	TNMG	220408-NMM	RE 0.8	0.8	0.25	4.50	7.00																		
			RE 1.2	1.2	0.30	4.50	7.00																		
			RE 1.6	1.6	0.35	4.50	7.00																		
		TNMG	160404-NMK	RE 0.4	0.4	0.10	2.00	3.50	●	○															
				RE 0.8	0.8	0.15	2.00	3.50	●	○															
				RE 1.2	1.2	0.20	2.00	3.50	●	○															
TNMG		160416-NMK	RE 1.6	1.6	0.25	2.00	3.50	○	○																
			RE 0.8	0.8	0.25	4.00	6.00	○	○																
			RE 1.2	1.2	0.30	4.00	6.00	●	○																
TNMG		220416-NMK	RE 1.6	1.6	0.35	4.00	6.00	●	○																
			RE 0.4	0.4	0.10	2.00	3.50																		
			RE 0.8	0.8	0.15	2.00	3.50																		
	TNGG	160404-NMN	RE 0.4	0.4	0.10	2.00	3.50																●		
			RE 0.8	0.8	0.15	2.00	3.50																	●	
			RE 1.2	1.2	0.20	2.00	3.50																		●
		TNMG	160408-NRP	RE 0.8	0.8	0.25	4.00	6.00																	
				RE 1.2	1.2	0.30	4.00	6.00																	
		TNMG	220412-NRP	RE 1.2	1.2	0.35	6.00	8.00																	
				RE 1.6	1.6	0.40	6.00	8.00																	
			TNMG	160408-NRK	RE 0.8	0.8	0.20	4.00	6.50	●	○														
					RE 1.2	1.2	0.25	4.00	6.50	●	○														
TNMG	220408-NRK		RE 0.8	0.8	0.35	6.00	9.00	○	○																
			RE 1.2	1.2	0.40	6.00	9.00	○	○																
			RE 1.6	1.6	0.45	6.00	9.00	○	○																

● stock standard, ○ non-standard stock, ▽ stock exhaustion



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TP	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT			
	Size	IC	S	D1	AN		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020
		0902□□	5.56	2.38	3.00		11°	P			200 380	180 360	140 300		80 220	60 180				200 380
	1103□□	6.35	3.18	3.40	11°	M					150 280	120 240	80 160	60 120				160 280	160 300	
						K	180 380	150 300					80 170					200 400	200 420	
						N								600 2200	600 2000	500 1500				
						S							40 80							
						H														
GRADE APPLICATION AREA	Stable machining, continuous cut																			
main application	General machining, light interruption																			
applicable	Unstable machining, interrupted cut																			
FINISHING ground chipbreaker, picture: right-hand	TPEH	090202 ^ø /L-PPF	RE 0.2	a _p ▶ 0.10 f _n ▶ 0.03	0.30 0.06	0.50 0.09								●				●		
		090204 ^ø /L-PPF	RE 0.4	a _p ▶ 0.10 f _n ▶ 0.04	0.30 0.07	0.50 0.10									●				●	
	TPEH	110302 ^ø /L-PPF	RE 0.2	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.07	0.70 0.10									●				●	
		110304 ^ø /L-PPF	RE 0.4	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.08	0.70 0.12									●				●	
MEDIUM ground chipbreaker, picture: right-hand	TPEH	110304 ^ø /L-PPM	RE 0.4	a _p ▶ 0.40 f _n ▶ 0.03	1.00 0.06	1.60 0.09								●				●		

● stock standard

VB	CARBIDE Positive					ISO513	HC-CVD						HC-PVD			HW		HT				
	Size	IC	S	D1	AN		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020	
	1103□	6.35	3.18	2.80	5°		M			200 380	180 360	140 300	150 280	120 240	80 220	60 180				200 380	200 400	
	1604□	9.525	4.76	4.40	5°	K	180 380	150 300						80 170					200 400	200 420		
						N										600 2200	600 2000	500 1500				
						S								40 80								
						H																
	GRADE APPLICATION AREA	Stable machining, continuous cut					+															
main application	General machining, light interruption					-																
applicable	Unstable machining, interrupted cut					+																
FINISHING	PPF P M		VBET	110302 [®] /L-PPF	RE 0.2	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.07	0.70 0.10								●				●		
				110304 [®] /L-PPF	RE 0.4	a _p ▶ 0.10 f _n ▶ 0.04	0.40 0.08	0.70 0.12										●				●
	PFU P M S		VBMT	110304-PFU	RE 0.4	a _p ▶ 0.20 f _n ▶ 0.05	0.80 0.11	1.40 0.17						●	●						●	○
				160404-PFU	RE 0.4	a _p ▶ 0.30 f _n ▶ 0.06	1.00 0.14	1.70 0.22			●	●	●		●	●						●
MEDIUM	PPM P M		VBET	110302 [®] /L-PPM	RE 0.2	a _p ▶ 0.40 f _n ▶ 0.03	1.00 0.05	1.60 0.07								●					●	
				110304 [®] /L-PPM	RE 0.4	a _p ▶ 0.40 f _n ▶ 0.03	1.00 0.06	1.60 0.09										●				
MEDIUM	PMU P M K		VBMT	160404-PMU	RE 0.4	a _p ▶ 0.60 f _n ▶ 0.07	1.80 0.16	3.00 0.25	●			●	●		●	●					●	
				160408-PMU	RE 0.8	a _p ▶ 0.60 f _n ▶ 0.08	1.80 0.19	3.00 0.30	●			●	●		●	●						
ROUGHING	PRU P K		VBMT	160408-PRU	RE 0.8	a _p ▶ 1.50 f _n ▶ 0.12	2.50 0.22	3.50 0.32	●			●										

● stock standard

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VC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT					
	Size	IC	S	D1	AN		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020	
	1103□	6.35	3.18	2.80	7°	M			200 380	180 360	140 300			80 220	60 180					200 380	200 400	
	1604□	9.525	4.76	4.40	7°	K	180 380	150 300				150 280	120 240	80 160	60 120					160 280	160 300	
	2205□	12.70	5.56	5.50	7°	N											600 2200	600 2000	500 1500		200 400	200 420
							S								40 80							
						H																
GRADE APPLICATION AREA	Stable machining, continuous cut																					
main application	General machining, light interruption																					
applicable	Unstable machining, interrupted cut																					
PMU P M K general purpose	VCMT	110304-PMU	RE 0.4	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.06	1.50 0.13	2.50 0.20	●			●	●		●							●		
	VCMT	160404-PMU	RE 0.4	$a_p \triangleright$ 0.60 $f_n \triangleright$ 0.07	1.80 0.16	3.00 0.25	●			●	●		●								●	
	VCMT	160408-PMU	RE 0.8	$a_p \triangleright$ 0.60 $f_n \triangleright$ 0.08	1.80 0.19	3.00 0.30	●			●	●		●	▽							●	
	PMN N polished surface	VCGX	110302-PMN	RE 0.2	$a_p \triangleright$ 0.30 $f_n \triangleright$ 0.05	1.50 0.10	2.70 0.15											●				
		VCGX	110304-PMN	RE 0.4	$a_p \triangleright$ 0.30 $f_n \triangleright$ 0.06	1.50 0.13	2.70 0.20										○	○	●			
		VCGX	110308-PMN	RE 0.8	$a_p \triangleright$ 0.30 $f_n \triangleright$ 0.08	1.50 0.16	2.70 0.24										○	●	●			
		VCGX	160402-PMN	RE 0.2	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.06	2.00 0.11	3.50 0.16										○	●				
		VCGX	160404-PMN	RE 0.4	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.08	2.00 0.16	3.50 0.24										○	●	●			
		VCGX	160408-PMN	RE 0.8	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.10	2.00 0.20	3.50 0.30										○	○	●			
		VCGX	160412-PMN	RE 1.2	$a_p \triangleright$ 0.50 $f_n \triangleright$ 0.12	2.00 0.24	3.50 0.36										○		●			
		VCGX	220512-PMN	RE 1.6	$a_p \triangleright$ 1.00 $f_n \triangleright$ 0.14	3.00 0.27	5.00 0.40										○		○			
		VCGX	220516-PMN	RE 1.6	$a_p \triangleright$ 1.00 $f_n \triangleright$ 0.14	3.00 0.30	5.00 0.46										○		●			
VCGX	220530-PMN	RE 3.0	$a_p \triangleright$ 1.00 $f_n \triangleright$ 0.20	3.00 0.40	5.00 0.60										●	●	●					
PRU P K reinforced edge	VCMT	160404-PRU	RE 0.4	$a_p \triangleright$ 1.50 $f_n \triangleright$ 0.10	2.50 0.19	3.50 0.28	●				●											
	VCMT	160408-PRU	RE 0.8	$a_p \triangleright$ 1.50 $f_n \triangleright$ 0.12	2.50 0.22	3.50 0.32	●				●											

● stock standard, ○ non-standard stock



VN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT		
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015
	1604□	9.525	4.76	3.81	P			200 380	180 360	140 300	100 240						200 380	
					M							150 280	120 240	100 220	80 200		160 280	
					K	180 380	150 300										200 400	
					N												500 1500	
					S													
					H													
GRADE APPLICATION AREA	Stable machining, continuous cut				+													
main application	General machining, light interruption				-													
applicable	Unstable machining, interrupted cut				+													

FINISHING	NSP P	VNMG	160404-NSP	RE 0.4	a _p ▶ f _n ▶	0.40 0.08	1.20 0.15	2.00 0.22																		
			160408-NSP	RE 0.8	a _p ▶ f _n ▶	0.40 0.10	1.20 0.22	2.00 0.34																		
	NFP P	VNMG	160408-NFP	RE 0.8	a _p ▶ f _n ▶	0.50 0.08	1.50 0.17	2.50 0.26																		
	NFM M	VNMG	160404-NFM	RE 0.4	a _p ▶ f _n ▶	0.40 0.08	1.20 0.14	2.00 0.20																		
			160408-NFM	RE 0.8	a _p ▶ f _n ▶	0.40 0.10	1.20 0.20	2.00 0.30																		
MEDIUM	NMP P	VNMG	160404-NMP	RE 0.4	a _p ▶ f _n ▶	1.50 0.12	2.50 0.20	3.50 0.28																		
			160408-NMP	RE 0.8	a _p ▶ f _n ▶	1.50 0.16	2.50 0.25	3.50 0.34																		
			160412-NMP	RE 1.2	a _p ▶ f _n ▶	1.50 0.20	2.50 0.30	3.50 0.40																		
		NUP P	VNMG	160404-NUP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	2.50 0.20	4.00 0.30																	
				160408-NUP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35																	
				160412-NUP	RE 1.2	a _p ▶ f _n ▶	1.00 0.18	2.50 0.30	4.00 0.42																	
	NMM M	VNMG	160404-NMM	RE 0.4	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35																		
			160408-NMM	RE 0.8	a _p ▶ f _n ▶	1.00 0.20	2.50 0.30	4.00 0.40																		
	NMK K	VNMG	160404-NMK	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30																		
			160408-NMK	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35																		
			160412-NMK	RE 1.2	a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40																		

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

THREADING

GROOVING

MILLING

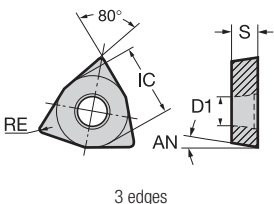



DRILLING

ACCESSORIES

VN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT	
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015
<p>4 edges</p>	1604□□	9.525	4.76	3.81	P			200 380	180 360	140 300	100 240					200 380	
					M						150 280	120 240	100 220	80 200		160 280	
					K	180 380	150 300									200 400	
					N											500 1500	
					S												
					H												
GRADE APPLICATION AREA	Stable machining, continuous cut				+												
main application	General machining, light interruption				-												
applicable	Unstable machining, interrupted cut				+												
MEDIUM NMN	VNGG	160404-NMN	RE 0.4	a_p ▶ 0.50 f_n ▶ 0.10	2.00 0.20	3.50 0.30											●
		160408-NMN	RE 0.8	a_p ▶ 0.50 f_n ▶ 0.15	2.00 0.25	3.50 0.35											●
ROUGHING NRK	VNMG	160408-NRK	RE 0.8	a_p ▶ 1.50 f_n ▶ 0.20	4.00 0.30	6.50 0.40	○	○									
		160412-NRK	RE 1.2	a_p ▶ 1.50 f_n ▶ 0.25	4.00 0.35	6.50 0.45	○	○									

● stock standard, ○ non-standard stock



WC	CARBIDE Positive					ISO513	HC-CVD						HC-PVD		HW		HT					
	Size	IC	S	D1	AN		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JPS015	JPS025	JPS010	JUG010	JUG020	JU4015	JP4020		
 <p>3 edges</p>						P			200 380	180 360	140 300			80 220	60 180					200 380	200 400	
	12T3 □□	9.525	3.97	4.40	7°	M					150 280	120 240	80 160	60 120						160 280	160 300	
						K	180 380	150 300						80 170						200 400	200 420	
						N									600 2200	600 2000	500 1500					
						S								40 80								
						H																
GRADE APPLICATION AREA	Stable machining, continuous cut					+																
 main application	General machining, light interruption					-																
 applicable	Unstable machining, interrupted cut					+																
MEDIUM	 <p>general purpose</p>	WCMT	12T304-PMU	RE 0.4	a_p ▶ 0.60 f_n ▶ 0.07	1.80 0.16	3.00 0.25	●			●	●		●							●	
			12T308-PMU	RE 0.8	a_p ▶ 0.60 f_n ▶ 0.08	1.80 0.19	3.00 0.30	●			●	●		●								

● stock standard

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

WN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT			
	Size	IC	S	D1		P	JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015	
	0604□	9.525	4.76	3.81		M			200 380	180 360	140 300	100 240			150 280	120 240	100 220	80 200	
<p>6 edges</p>	0804□	12.70	4.76	5.16	K	180 380	150 300												200 400
					N													500 1500	
					S														
					H														
GRADE APPLICATION AREA		Stable machining, continuous cut																	
■ main application ■ applicable		General machining, light interruption			+														
		Unstable machining, interrupted cut			-														

FINISHING	NSP P	WNGM	060404-NSP	RE 0.4	a _p ▶ f _n ▶	0.30 0.06	0.70 0.12	1.10 0.18											
									060408-NSP	RE 0.8	a _p ▶ f _n ▶	0.30 0.08	0.70 0.16	1.10 0.24					
	WNGM	080404-NSP	RE 0.4	a _p ▶ f _n ▶	0.40 0.08	1.20 0.15	2.00 0.22		●	○									●
		080408-NSP	RE 0.8	a _p ▶ f _n ▶	0.40 0.10	1.20 0.22	2.00 0.34		●	●									●
	WNGM	060404-NFP	RE 0.4	a _p ▶ f _n ▶	0.50 0.05	1.00 0.10	1.50 0.15				▽								
		080404-NFP	RE 0.4	a _p ▶ f _n ▶	0.50 0.06	1.50 0.12	2.50 0.18				▽								
	WNGM	080408-NFP	RE 0.8	a _p ▶ f _n ▶	0.50 0.08	1.50 0.17	2.50 0.26				▽								●
		060404-NFM	RE 0.4	a _p ▶ f _n ▶	0.30 0.05	0.70 0.10	1.10 0.15								●				
	WNGM	060408-NFM	RE 0.8	a _p ▶ f _n ▶	0.30 0.07	0.70 0.15	1.10 0.23								●				
		080404-NFM	RE 0.4	a _p ▶ f _n ▶	0.40 0.08	1.20 0.14	2.00 0.20								●				
	WNGM	080408-NFM	RE 0.8	a _p ▶ f _n ▶	0.40 0.10	1.20 0.20	2.00 0.30							●					
		060404-NMP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	1.50 0.15	2.00 0.20												
	WNGM	060408-NMP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	1.50 0.20	2.00 0.25												
		080404-NMP	RE 0.4	a _p ▶ f _n ▶	1.50 0.12	2.50 0.20	3.50 0.28												▽
	WNGM	080408-NMP	RE 0.8	a _p ▶ f _n ▶	1.50 0.16	2.50 0.25	3.50 0.34												▽
		080412-NMP	RE 1.2	a _p ▶ f _n ▶	1.50 0.20	2.50 0.30	3.50 0.40												
	WNGM	080416-NMP	RE 1.6	a _p ▶ f _n ▶	1.50 0.25	2.50 0.35	3.50 0.45												
		060404-NUP	RE 0.4	a _p ▶ f _n ▶	0.70 0.08	1.50 0.15	2.30 0.22												
	WNGM	060408-NUP	RE 0.8	a _p ▶ f _n ▶	0.70 0.12	1.50 0.20	2.30 0.28		○	●	●								●
		080404-NUP	RE 0.4	a _p ▶ f _n ▶	1.00 0.10	2.50 0.20	4.00 0.30			●	●	●		●					●
	WNGM	080408-NUP	RE 0.8	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35			●	●	●		●					●
		080412-NUP	RE 1.2	a _p ▶ f _n ▶	1.00 0.18	2.50 0.30	4.00 0.42			●	●	●		●					
	WNGM	080416-NUP	RE 1.6	a _p ▶ f _n ▶	1.00 0.20	2.50 0.35	4.00 0.50			●	●	●		●					
		060404-NMM	RE 0.4	a _p ▶ f _n ▶	0.70 0.13	1.50 0.20	2.30 0.27							●	●	○			
	WNGM	060408-NMM	RE 0.8	a _p ▶ f _n ▶	0.70 0.18	1.50 0.25	2.30 0.32						●	●	●				
		060412-NMM	RE 1.2	a _p ▶ f _n ▶	0.70 0.20	1.50 0.28	2.30 0.36							●	●				

● stock standard, ○ non-standard stock, ▽ stock exhaustion



WN	CARBIDE Negative				ISO513	HC-CVD								HC-PVD	HW	HT	
	Size	IC	S	D1		JC7010	JC7020	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU6020	JU4015
<p>6 edges</p>					P			200 380	180 360	140 300	100 240						200 380
	0604 □	9.525	4.76	3.81	M						150 280	120 240	100 220	80 200			160 280
	0804 □	12.70	4.76	5.16	K	180 380	150 300										200 400
					N											500 1500	
					S												
					H												
GRADE APPLICATION AREA	Stable machining, continuous cut				+												
main application	General machining, light interruption				-												
applicable	Unstable machining, interrupted cut				+												

MEDIUM	NMM M	WNMG	080404-NMM	RE 0.4	a _p ▶ f _n ▶	1.00 0.15	2.50 0.25	4.00 0.35									▽	
			080408-NMM	RE 0.8	a _p ▶ f _n ▶	1.00 0.20	2.50 0.30	4.00 0.40									▽	
			080412-NMM	RE 1.2	a _p ▶ f _n ▶	1.00 0.25	2.50 0.35	4.00 0.45										
	NMK K	WNMG	080404-NMK	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30	●	○								
			080408-NMK	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35	●	●								
			080412-NMK	RE 1.2	a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40	●	●								
	NWU P K	WNMG	080408-NWU	RE 0.8	a _p ▶ f _n ▶	0.80 0.20	2.00 0.40	3.20 0.60	●		●							
			080412-NWU	RE 1.2	a _p ▶ f _n ▶	0.80 0.25	2.00 0.45	3.20 0.65	●		●							
	NMN N	WNGG	060404-NMN	RE 0.4	a _p ▶ f _n ▶	0.30 0.08	1.00 0.15	1.70 0.22							●			
			060408-NMN	RE 0.8	a _p ▶ f _n ▶	0.30 0.10	1.00 0.20	1.70 0.30							●			
		WNGG	080404-NMN	RE 0.4	a _p ▶ f _n ▶	0.50 0.10	2.00 0.20	3.50 0.30							●			
			080408-NMN	RE 0.8	a _p ▶ f _n ▶	0.50 0.15	2.00 0.25	3.50 0.35							●			
			080412-NMN	RE 1.2	a _p ▶ f _n ▶	0.50 0.20	2.00 0.30	3.50 0.40							●			
	NRP P	WNMG	080408-NRP	RE 0.8	a _p ▶ f _n ▶	2.00 0.25	4.00 0.35	6.00 0.45			●	●	●	●				
			080412-NRP	RE 1.2	a _p ▶ f _n ▶	2.00 0.30	4.00 0.40	6.00 0.50			●	●	●	●				
			080416-NRP	RE 1.6	a _p ▶ f _n ▶	2.00 0.35	4.00 0.45	6.00 0.55			●	●	●					
	NTP P	WNMG	080408-NTP	RE 0.8	a _p ▶ f _n ▶	3.00 0.30	5.00 0.40	7.00 0.50			▽	▽						

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



TURNING PCBN

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

MATERIAL	OPERATION	CONDITION	EDGE PREP.	GRADE	Vc (m/min)	fn (mm/rev)	COOLANT
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		
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		
	roughing ap > 0.5 mm SOLID PCBN		UE	NBH900U	100 140 180	0.15 0.30 0.45	
			UE	NBH950U	80 120 160	0.10 0.25 0.40	
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	
	roughing ap > 0.5 mm SOLID PCBN		UE	NBH900U	60 100 140	0.10 0.30 0.50	
			UE	NBH950U	40 80 120	0.10 0.25 0.40	
High speed steel	finishing ap < 0.5 mm		UE	NBL150C	100 120 140	0.05 0.08 0.11	
White cast iron	finishing ap < 0.5 mm		UE	NBH500C	60 120 180	0.10 0.30 0.50	
			UE	NBH900U	40 80 120	0.10 0.25 0.40	
	roughing ap > 0.5 mm SOLID PCBN		UE	NBH500C	60 90 120	0.20 0.40 0.60	
			UE	NBH950U	40 60 80	0.20 0.35 0.50	
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	
	roughing ap > 0.5 mm SOLID PCBN		UE	NBH500C	600 1000 1400	0.20 0.40 0.60	
			UE	NBH900U tool life	400 800 1200	0.20 0.35 0.50	
	NBH950U reliability	400 700 1000					
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	
	roughing ap > 0.5 mm SOLID PCBN		UE	NBH500C	300 400 500	0.10 0.25 0.40	
Sintered powder metal, high alloyed	finishing ap < 0.5 mm		UE	NBL150C	200 250 300	0.10 0.25 0.40	
					NBH900U tool life		
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

CC	PCBN Positive					ISO513	BL				BH																							
	Size	IC	S	D1	AN		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900	NBH950U	◀ SINTERED POWDER METAL																		
	MICRO CC	3.50	1.40	1.90	7°	M	80	240			140	300																						
	0602□□	6.35	2.38	2.80	7°	K					400	300	200	180																				
	09T3□□	9.525	3.97	4.40	7°	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																																	
applicable	Unstable machining, interrupted cut																																	

SHARP	SE H	MICROBORING, full face	MICRO	CC.R02S-SE-FF	RE 0.2	a_p	0.05	0.10	0.15														
						f_n	0.04	0.06	0.08														
				CC.R04S-SE-FF	RE 0.4	a_p	0.05	0.10	0.15														
						f_n	0.04	0.08	0.12														
SHARP	SE H		CCGW	060202S-SE-2S	RE 0.2	a_p	0.05	0.10	0.15	○	●												
								f_n	0.04	0.06	0.08												
				060204S-SE-2S	RE 0.4	a_p	0.05	0.10	0.15	●	●												
								f_n	0.04	0.08	0.12												
				060208S-SE-2S	RE 0.8	a_p	0.05	0.10	0.15	○													
								f_n	0.05	0.10	0.15												
UNIVERSAL	UE H		CCGW	060202S-UE-2S	RE 0.2	a_p	0.06	0.13	0.20	○	●												
								f_n	0.05	0.10	0.15												
				060204S-UE-2S	RE 0.4	a_p	0.06	0.13	0.20	●	●	●											
								f_n	0.06	0.12	0.18												
				060208S-UE-2S	RE 0.8	a_p	0.06	0.13	0.20	○	○												
								f_n	0.06	0.13	0.20												
UNIVERSAL	UE KH	tip with carbide backed	CCGW	060204S-UE-2C	RE 0.4	a_p	0.06	0.13	0.20			●											
								f_n	0.06	0.12	0.18												
				060208S-UE-2C	RE 0.8	a_p	0.06	0.13	0.20			○											
								f_n	0.06	0.13	0.20												
				09T304S-UE-2C	RE 0.4	a_p	0.06	0.13	0.20			●											
								f_n	0.06	0.12	0.18												
REINFORCED	RE H		CCGW	060204S-RE-2S	RE 0.4	a_p	0.08	0.16	0.25			●											
								f_n	0.06	0.13	0.20												
				060208S-RE-2S	RE 0.8	a_p	0.08	0.16	0.25			○											
								f_n	0.06	0.14	0.22												
REINFORCED			CCGW	09T304S-RE-2S	RE 0.4	a_p	0.08	0.16	0.25			●											
								f_n	0.06	0.13	0.20												
				09T308S-RE-2S	RE 0.8	a_p	0.08	0.16	0.25			○											
								f_n	0.06	0.14	0.22												
WIPER	WE H		CCGW	09T304S-WE-2S	RE 0.4	a_p	0.06	0.13	0.20	●	●												
								f_n	0.10	0.15	0.20												
				09T308S-WE-2S	RE 0.8	a_p	0.06	0.13	0.20	●	●												
						f_n	0.10	0.18	0.26														

● stock standard, ○ non-standard stock, ▲ upcoming introduction



TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

CN	PCBN Negative				ISO513	BL				BH																							
	Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900	NBH950	◀ SINTERED POWDER METAL																		
<p>4 edges</p>	MICRO CN	7.50	3.18	3.60	M	80	240			140	300																						
	0903□	9.525	3.18	-	K					400	300	200	180																				
	1204□	12.70	4.76	(5.16)	N					1200	1400	1200	1000																				
	1207□	12.70	7.94	-	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				+																												
SE H MICRONEGA, vertical	MICRO	CN.R02S-SE-4V	RE 0.2	a_p 0.06 f_n 0.05	0.13 0.20 0.10 0.15	▲																											
		CN.R04S-SE-4V	RE 0.4	a_p 0.06 f_n 0.06	0.13 0.20 0.12 0.18	▲																											
		CN.R08S-SE-4V	RE 0.8	a_p 0.06 f_n 0.06	0.13 0.20 0.13 0.20	▲																											
SE H vertical	CNGA	120404S-SE-4V	RE 0.4	a_p 0.06 f_n 0.06	0.13 0.20 0.12 0.18	○ ○																											
		120408S-SE-4V	RE 0.8	a_p 0.06 f_n 0.06	0.13 0.20 0.13 0.20	● ●																											
		120412S-SE-4V	RE 1.2	a_p 0.06 f_n 0.06	0.13 0.20 0.14 0.22	○ ○																											
UE K H MICRONEGA, vertical	MICRO	CN.R02S-UE-4V	RE 0.2	a_p 0.07 f_n 0.06	0.16 0.25 0.12 0.18	▲ ▲																											
		CN.R04S-UE-4V	RE 0.4	a_p 0.07 f_n 0.08	0.16 0.25 0.14 0.20	▲ ▲																											
		CN.R08S-UE-4V	RE 0.8	a_p 0.07 f_n 0.08	0.16 0.25 0.15 0.22	▲ ▲																											
UE K H vertical	CNGA	120404S-UE-4V	RE 0.4	a_p 0.07 f_n 0.08	0.16 0.25 0.14 0.20	● ● ●																											
		120408S-UE-4V	RE 0.8	a_p 0.07 f_n 0.08	0.16 0.25 0.15 0.22	● ● ● ●																											
		120412S-UE-4V	RE 1.2	a_p 0.07 f_n 0.08	0.16 0.25 0.16 0.24	● ● ● ●																											
UE K H solid	CNGA	120408S-UE	RE 0.8	a_p 1.00 f_n 0.10	2.00 3.00 0.20 0.30	○																											
		120412S-UE	RE 1.2	a_p 1.00 f_n 0.10	2.00 3.00 0.22 0.35	●																											
UE K H solid, without hole	CNGN	090308S-UE	RE 0.8	a_p 0.50 f_n 0.10	1.50 2.50 0.20 0.30	●																											
		090312S-UE	RE 1.2	a_p 0.50 f_n 0.10	1.50 2.50 0.22 0.35	●																											
		090316S-UE	RE 1.6	a_p 0.50 f_n 0.10	1.50 2.50 0.25 0.40	○																											
	CNGN	120408S-UE	RE 0.8	a_p 1.00 f_n 0.10	2.00 3.00 0.20 0.30	●																											
		120412S-UE	RE 1.2	a_p 1.00 f_n 0.10	2.00 3.00 0.22 0.35	●																											
		120416S-UE	RE 1.6	a_p 1.00 f_n 0.10	2.00 3.00 0.25 0.40	○																											

● stock standard, ○ non-standard stock, ▲ upcoming introduction



CN	PCBN Negative				ISO513	BL				BH																							
	Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL																		
<p>4 edges</p>	MICRO CN	7.50	3.18	3.60	M	80	240			140	300																						
	0903□	9.525	3.18	-	K					400	300	200	180																				
	1204□	12.70	4.76	(5.16)	N					1200	1400	1200	1000																				
	1207□	12.70	7.94	-	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																																

UNIVERSAL 	CNGX	120712S-UE	RE 1.2	a _p ▶ f _n ▶	1.00 0.10	2.00 0.22	3.00 0.35												
solid, with dimple		120716S-UE	RE 1.6	a _p ▶ f _n ▶	1.00 0.10	2.00 0.25	3.00 0.40												
REINFORCED 	CNGA	120404S-RE-4V	RE 0.4	a _p ▶ f _n ▶	0.08 0.08	0.17 0.14	0.26 0.20												
vertical		120408S-RE-4V	RE 0.8	a _p ▶ f _n ▶	0.08 0.08	0.17 0.16	0.26 0.24												
		120412S-RE-4V	RE 1.2	a _p ▶ f _n ▶	0.08 0.08	0.17 0.17	0.26 0.26												
WIPER 	CNGA	120404S-WE-4V	RE 0.4	a _p ▶ f _n ▶	0.07 0.10	0.16 0.17	0.25 0.24												
vertical		120408S-WE-4V	RE 0.8	a _p ▶ f _n ▶	0.07 0.10	0.16 0.19	0.25 0.28												
		120412S-WE-4V	RE 1.2	a _p ▶ f _n ▶	0.07 0.10	0.16 0.20	0.25 0.30												

● stock standard, ○ non-standard stock

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TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

DRILLING

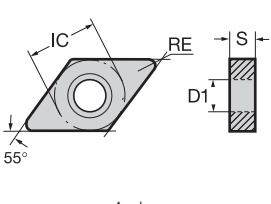
ACCESSORIES

<h1>DC</h1> <p>2 edges</p>	<h2>PCBN Positive</h2>					ISO513	BL				BH				◀ SINTERED POWDER METAL							
							P	80				140										
	M	240				300																
	K					400	300	200	180													
	N					1200	1400	1200	1000													
	S																					
GRADE APPLICATION AREA						Stable machining, continuous cut						◯										
main application						General machining, light interruption						●										
applicable						Unstable machining, interrupted cut						◯										

SHARP	SE	DCGW 070202S-SE-2S	RE 0.2	a_p ▶ 0.05	f_n ▶ 0.04	0.10	0.15	○	●												
		070204S-SE-2S	RE 0.4	a_p ▶ 0.05	f_n ▶ 0.04	0.10	0.15	●	●												
		070208S-SE-2S	RE 0.8	a_p ▶ 0.05	f_n ▶ 0.05	0.10	0.15	○													
	UNIVERSAL	UE	DCGW 11T302S-UE-2S	RE 0.2	a_p ▶ 0.05	f_n ▶ 0.04	0.10	0.15	○	●											
			11T304S-UE-2S	RE 0.4	a_p ▶ 0.05	f_n ▶ 0.04	0.10	0.15	●	●											
			11T308S-UE-2S	RE 0.8	a_p ▶ 0.05	f_n ▶ 0.05	0.10	0.15	○	●											
		DCGW 11T304S-UE-2C	RE 0.4	a_p ▶ 0.06	f_n ▶ 0.06	0.13	0.20			●											
REINFORCED	UE KH	11T308S-UE-2C	RE 0.8	a_p ▶ 0.06	f_n ▶ 0.06	0.13	0.20			●											
		DCGW 070204S-RE-2S	RE 0.4	a_p ▶ 0.08	f_n ▶ 0.06	0.16	0.25				○										
		070208S-RE-2S	RE 0.8	a_p ▶ 0.08	f_n ▶ 0.06	0.16	0.25				○										
	DCGW	11T304S-RE-2S	RE 0.4	a_p ▶ 0.08	f_n ▶ 0.06	0.16	0.25			●											
11T308S-RE-2S		RE 0.8	a_p ▶ 0.08	f_n ▶ 0.06	0.16	0.25			●												

● stock standard, ○ non-standard stock



<h1>DN</h1> 	PCBN Negative			ISO513	BL				BH												
	Size	IC	S		D1	P	80	240		140	300										
	MICRO DN	7.00	3.18		3.60	M															
	1504□	12.70	4.76	5.16	K				400	300	200	180									
	1506□	12.70	6.35	5.16	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	Image	MICRO	DN.R02S-SE-4V	RE 0.2	a _p ▶ f _n ▶	0.13 0.10	0.20 0.15												
									▲											
				DN.R04S-SE-4V	RE 0.4	a _p ▶ f _n ▶	0.13 0.12	0.20 0.18	▲											
				DN.R08S-SE-4V	RE 0.8	a _p ▶ f _n ▶	0.13 0.13	0.20 0.20	▲											
				150404S-SE-4V	RE 0.4	a _p ▶ f _n ▶	0.13 0.12	0.20 0.18	○	○										
				150408S-SE-4V	RE 0.8	a _p ▶ f _n ▶	0.13 0.13	0.20 0.20	○	○										
				150604S-SE-4S	RE 0.4	a _p ▶ f _n ▶	0.13 0.12	0.20 0.18	○	○										
				150608S-SE-4S	RE 0.8	a _p ▶ f _n ▶	0.13 0.13	0.20 0.20	○	○										

UNIVERSAL	UE K H	Image	MICRO	DN.R02S-UE-4V	RE 0.2	a _p ▶ f _n ▶	0.16 0.12	0.25 0.18												
									▲	▲										
				DN.R04S-UE-4V <td>RE 0.4</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.14</td> <td>0.25 0.20</td> <td></td> <td>▲</td> <td>▲</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.4	a _p ▶ f _n ▶	0.16 0.14	0.25 0.20		▲	▲									
				DN.R08S-UE-4V <td>RE 0.8</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.15</td> <td>0.25 0.22</td> <td></td> <td>▲</td> <td>▲</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶ f _n ▶	0.16 0.15	0.25 0.22		▲	▲									
				150404S-UE-4V <td>RE 0.4</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.14</td> <td>0.25 0.20</td> <td>○</td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.4	a _p ▶ f _n ▶	0.16 0.14	0.25 0.20	○	●										
				150408S-UE-4V <td>RE 0.8</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.15</td> <td>0.25 0.22</td> <td>○</td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶ f _n ▶	0.16 0.15	0.25 0.22	○	●										
				150604S-UE-4V <td>RE 0.4</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.14</td> <td>0.25 0.20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.4	a _p ▶ f _n ▶	0.16 0.14	0.25 0.20												
				150608S-UE-4V <td>RE 0.8</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.15</td> <td>0.25 0.22</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶ f _n ▶	0.16 0.15	0.25 0.22												
				150612S-UE-4V <td>RE 1.2</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.16</td> <td>0.25 0.24</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 1.2	a _p ▶ f _n ▶	0.16 0.16	0.25 0.24												
				150604S-UE-4S <td>RE 0.4</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.14</td> <td>0.25 0.20</td> <td>○</td> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.4	a _p ▶ f _n ▶	0.16 0.14	0.25 0.20	○	●	●									
				150608S-UE-4S <td>RE 0.8</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.15</td> <td>0.25 0.22</td> <td>○</td> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶ f _n ▶	0.16 0.15	0.25 0.22	○	●	●									
				150612S-UE-4S <td>RE 1.2</td> <td>a_p ▶ f_n ▶</td> <td>0.16 0.16</td> <td>0.25 0.24</td> <td>○</td> <td>○</td> <td>○</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 1.2	a _p ▶ f _n ▶	0.16 0.16	0.25 0.24	○	○	○									

● stock standard, ○ non-standard stock, ▲ upcoming introduction



TURNING
THREADING
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MILLING
DRILLING
ACCESSORIES

TURNING

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DRILLING

ACCESSORIES

<h1>DN</h1>	PCBN Negative				ISO513	BL				BH																							
	Size	IC	S	D1		NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900C	NBH950C	◀ SINTERED POWDER METAL																			
<p>4 edges</p>	MICRO DN	7.00	3.18	3.60	P	80 240				140 300																							
	1504□□	12.70	4.76	5.16	M																												
	1506□□	12.70	6.35	5.16	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	+																											
REINFORCED		RE	DNGA	150604S-RE-4S	RE 0.4	a _p ▶ 0.08 f _n ▶ 0.08	0.17 0.26 0.14 0.20																										
			150608S-RE-4S	RE 0.8	a _p ▶ 0.08 f _n ▶ 0.08	0.17 0.26 0.16 0.24																											
			150612S-RE-4S	RE 1.2	a _p ▶ 0.08 f _n ▶ 0.08	0.17 0.26 0.17 0.26																											

○ non-standard stock

RN	PCBN Negative				ISO513	BL				BH											
	Size	IC	S			NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL							
	0603 □□	6.35	3.18		P	80 240				140 300											
	0903 □□	9.525	3.18		M																
	1203 □□	12.70	3.18		K					400 1200	300 1400	200 1200	180 1000								
	1204 □□	12.70	4.76		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 K H solid	RNGN 090300T-SE	-	a_p ▶ 0.20 f_n ▶ 0.10	1.50 0.20	2.80 0.40							●									
	RNGN 060300S-UE	-	a_p ▶ 0.50 f_n ▶ 0.10	1.50 0.20	2.50 0.30							●									
UNIVERSAL UE K H solid	RNGN 090300S-UE	-	a_p ▶ 0.50 f_n ▶ 0.10	2.00 0.30	3.50 0.50							●	●	●							
	RNGN 120300S-UE	-	a_p ▶ 0.50 f_n ▶ 0.10	2.50 0.40	4.50 0.70							●	●								
	RNGN 120400S-UE	-	a_p ▶ 0.50 f_n ▶ 0.10	2.50 0.40	4.50 0.70							●	●	●							
REINFORCED RE K H solid	RNGN 120400S-RE	-	a_p ▶ 1.00 f_n ▶ 0.10	3.00 0.45	5.00 0.80							●	○								

● stock standard, ○ non-standard stock

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

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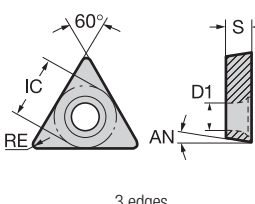
ACCESSORIES


SN	PCBN Negative				ISO513	BL				BH																				
	Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL															
<p>8 edges</p>	0903□	9.525	3.18	-	M	80	240			140	300																			
	1204□	12.70	4.76	(5.16)	K					400	300	200	180																	
	1207□	12.70	7.94	-	N					1200	1400	1200	1000																	
					S																									
					H	120	240	100	220	80	200	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																													

UNIVERSAL	UE K H	SNGA	120404S-UE-8V	RE 0.4	a _p ▶ 0.07 f _n ▶ 0.08	1.16 0.14	0.25 0.20													
vertical		SNGA	120408S-UE-8V	RE 0.8	a _p ▶ 0.07 f _n ▶ 0.08	1.16 0.15	0.25 0.22	○	○											
																		●		
																		●		
solid		SNGA	120412S-UE	RE 1.2	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.22	3.00 0.35											●		
solid, without hole		SNGN	090308S-UE	RE 0.8	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.20	2.50 0.30											●		
								SNGN	090312S-UE	RE 1.2	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.22	2.50 0.35							
		SNGN	090316S-UE	RE 1.6	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.25	2.50 0.40													
								SNGN	120408S-UE	RE 0.8	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.20	3.00 0.30							
		SNGN	120412S-UE	RE 1.2	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.22	3.00 0.35													
								SNGX	120416S-UE	RE 1.6	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.25	3.00 0.40							
solid, with dimple		SNGX	120712S-UE	RE 1.2	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.22	3.00 0.35													
								SNGX	120716S-UE	RE 1.6	a _p ▶ 1.00 f _n ▶ 0.10	2.00 0.25	3.00 0.40							

● stock standard, ○ non-standard stock



TC	PCBN Positive					ISO513	BL				BH				SINTERED POWDER METAL	
	Size	IC	S	D1	AN		NB1050C	NB1150C	NB1250C	NB1350C	NBH450C	NBH500C	NBH900U	NBH950U		
 <p>3 edges</p>	1102□	6.35	2.38	2.80	7°	P	80 240			140 300						
	16T3□	9.525	3.97	4.40	7°	M										
						K				400 1200	300 1400	200 1200	180 1000			
						N										
						S										
GRADE APPLICATION AREA																
Stable machining, continuous cut						H	120 240	100 220	80 200	60 160	60 160	60 180	40 180	40 160		
main application						+										
General machining, light interruption						-										
applicable						+										

SHARP	SE H	TCGW	Size	RE	a _p	f _n	Vc	fz	ISO513		BL				BH			
									+	-	NB1050C	NB1150C	NB1250C	NB1350C	NBH450C	NBH500C	NBH900U	NBH950U
SHARP		TCGW	110204S-SE-3S	RE 0.4	0.05	0.04	0.10	0.15	○	○								
			110208S-SE-3S	RE 0.8	0.05	0.05	0.10	0.15		○								
		TCGW	16T304S-SE-3S	RE 0.4	0.05	0.05	0.10	0.15	○	○								
			16T308S-SE-3S	RE 0.8	0.05	0.05	0.10	0.15		○								
UNIVERSAL	UE H	TCGW	110204S-UE-3S	RE 0.4	0.06	0.06	0.13	0.20	○	○	●							
			110208S-UE-3S	RE 0.8	0.06	0.06	0.13	0.20		○	●							
		TCGW	16T304S-UE-3S	RE 0.4	0.06	0.06	0.13	0.20	○	○	●							
			16T308S-UE-3S	RE 0.8	0.06	0.06	0.13	0.20		○	●							
	UE K H	TCGW	110204S-UE-3C	RE 0.4	0.06	0.06	0.13	0.20				●	○					
			110208S-UE-3C	RE 0.8	0.06	0.06	0.13	0.20				●	○					
		TCGW	16T304S-UE-3C	RE 0.4	0.06	0.06	0.13	0.20				●						
			16T308S-UE-3C	RE 0.8	0.06	0.06	0.13	0.20				●	○					
REINFORCED	RE H	TCGW	110204S-RE-3S	RE 0.4	0.08	0.06	0.16	0.25				○						
			110208S-RE-3S	RE 0.8	0.08	0.06	0.16	0.25				○						
		TCGW	16T304S-RE-3S	RE 0.4	0.08	0.06	0.16	0.25				○						
			16T308S-RE-3S	RE 0.8	0.08	0.06	0.16	0.25				○						
	RE K H	TCGW	110208S-RE-3C	RE 0.8	0.08	0.06	0.16	0.25				●*	●*					
			16T308S-RE-3C	RE 0.8	0.08	0.06	0.16	0.25				○*	○*					

● stock standard, ○ non-standard stock

* uncoated (NBH450U / NBH500U)



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TN	PCBN Negative				ISO513	BL				BH				◀ SINTERED POWDER METAL		
	Size	IC	S	D1		NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U			
<p>6 edges</p>	1604□	9.525	4.76	(3.81)	P	80			140							
					M	240			300	200	180					
					K				400	300	200	180				
					N				1200	1400	1200	1000				
					S											
					H	120	100	80	60	60	40	40				
						240	220	200	160	180	180	160				
GRADE APPLICATION AREA		Stable machining, continuous cut			+ - Hardness Toughness + -											
main application		General machining, light interruption														
applicable		Unstable machining, interrupted cut														

SHARP	SE	TNGA	Part	RE	a _p	f _n	Vickers	Toughness	Application												
									1	2	3	4	5	6	7	8	9	10			
vertical			160404S-SE-6V	RE 0.4	0.06	0.06	0.13	0.20	○	○											
			160408S-SE-6V	RE 0.8	0.06	0.06	0.13	0.20	○	○											
			160412S-SE-6V	RE 1.2	0.06	0.06	0.13	0.20	○	○											
vertical	UE	TNGA	160404S-UE-6V	RE 0.4	0.07	0.08	0.16	0.25	●	●	●		●	●							
			160408S-UE-6V	RE 0.8	0.07	0.08	0.16	0.25	●	●	●		●	●							
			160412S-UE-6V	RE 1.2	0.07	0.08	0.16	0.25	○	○	○		○	●							
vertical	UE	TNGN	160408S-UE	RE 0.8	1.00	0.10	2.00	3.00					●								
vertical	RE	TNGA	160404S-RE-6V	RE 0.4	0.08	0.08	0.17	0.26			○										
			160408S-RE-6V	RE 0.8	0.08	0.08	0.17	0.26			○										
			160412S-RE-6V	RE 1.2	0.08	0.08	0.17	0.26			○										

● stock standard, ○ non-standard stock



TP		PCBN Positive					ISO513	BL				BH				◀ SINTERED POWDER METAL	
		Size	IC	S	D1	AN		NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U		
						P	80 240				140 300						
	0902□	5.56	2.38	3.00	11°	M											
	1103□	6.35	3.18	3.30	11°	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		TPGW 110304S-SE-3S	RE 0.4	a_p f_n	0.05 0.04	0.10 0.08	0.15 0.12		○								
		110308S-SE-3S	RE 0.8	a_p f_n	0.05 0.05	0.10 0.10	0.15 0.15		○								
UNIVERSAL		TPGW 090204S-UE-3S	RE 0.4	a_p f_n	0.06 0.06	0.13 0.12	0.20 0.18			●							
		TPGW 110302S-UE-3S	RE 0.2	a_p f_n	0.06 0.05	0.13 0.10	0.20 0.15		○								
		110304S-UE-3S	RE 0.4	a_p f_n	0.06 0.06	0.13 0.12	0.20 0.18			●							
		110308S-UE-3S	RE 0.8	a_p f_n	0.06 0.06	0.13 0.13	0.20 0.20			●							

● stock standard, ○ non-standard stock

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<h1 style="font-size: 2em; margin: 0;">VB</h1>	PCBN Positive					ISO513	BL				BH											
	Size	IC	S	D1	AN		P	NBH050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL						
	1103□	6.35	3.18	2.80	5°	M	80	240			140	300										
	1604□	9.525	4.76	4.40	5°	K					400	300	200	180								
						N					1200	1400	1200	1000								
						S																
						H		120	100	80	60	60	60	40	40							
							240	220	200	160	160	180	180	160								
GRADE APPLICATION AREA		Stable machining, continuous cut				+ Hardness - Toughness		- Hardness + Toughness														
main application		General machining, light interruption				+ Hardness - Toughness		- Hardness + Toughness														
applicable		Unstable machining, interrupted cut				- Hardness + Toughness		+ Hardness - Toughness														

SHARP		SE H	VBGW 110302S-SE-2S	RE 0.2	a _p ▶ 0.05 f _n ▶ 0.04	0.10 0.15 0.06 0.08	●												
			110304S-SE-2S	RE 0.4	a _p ▶ 0.05 f _n ▶ 0.04	0.10 0.15 0.08 0.12	●	●											
		VE H	VBGW 160402S-VE-2S	RE 0.2	a _p ▶ 0.05 f _n ▶ 0.04	0.10 0.15 0.06 0.08	●												
			160404S-VE-2S	RE 0.4	a _p ▶ 0.05 f _n ▶ 0.04	0.10 0.15 0.08 0.12	●	●											
			160408S-VE-2S	RE 0.8	a _p ▶ 0.05 f _n ▶ 0.05	0.10 0.15 0.10 0.15	●	●											
UNIVERSAL		UE H	VBGW 110302S-UE-2S	RE 0.2	a _p ▶ 0.06 f _n ▶ 0.05	0.13 0.20 0.10 0.15	○												
			110304S-UE-2S	RE 0.4	a _p ▶ 0.06 f _n ▶ 0.06	0.13 0.20 0.12 0.18	●	●	●										
		UE KH	VBGW 160402S-UE-2S	RE 0.2	a _p ▶ 0.06 f _n ▶ 0.05	0.13 0.20 0.10 0.15	●												
			160404S-UE-2S	RE 0.4	a _p ▶ 0.06 f _n ▶ 0.06	0.13 0.20 0.12 0.18	●	●	●										
			160408S-UE-2S	RE 0.8	a _p ▶ 0.06 f _n ▶ 0.06	0.13 0.20 0.13 0.20	●	●	●										
REINFORCED		RE H	VBGW 160404S-RE-2S	RE 0.4	a _p ▶ 0.08 f _n ▶ 0.06	0.16 0.25 0.13 0.20				○									
			160408S-RE-2S	RE 0.8	a _p ▶ 0.08 f _n ▶ 0.06	0.16 0.25 0.14 0.22				○									
		RE KH	VBGW 160404S-RE-2C	RE 0.4	a _p ▶ 0.08 f _n ▶ 0.06	0.16 0.25 0.13 0.20					○*								
			160408S-RE-2C	RE 0.8	a _p ▶ 0.08 f _n ▶ 0.06	0.16 0.25 0.14 0.22					○*								

● stock standard, ○ non-standard stock

* uncoated (NBH450U)



VC		PCBN Positive					ISO513	BL				BH																													
		Size	IC	S	D1	AN		NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL																									
	1103□□	6.35	3.18	2.80	7°	P	80	240			140	300																													
	1604□□	9.525	4.76	4.40	7°	M																																			
							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					-																																		
■ applicable		Unstable machining, interrupted cut					+																																		

	SE	VCGW	Part Number	RE	a _p	f _n	V	T	M	N	S	H	Hardness		Toughness																									
													+	-	-	+																								
SHARP		VCGW	110304S-SE-2S	RE 0.4	a _p ▶ 0.05	f _n ▶ 0.04	0.10	0.15									●																							
			160404S-SE-2S	RE 0.4	a _p ▶ 0.05	f _n ▶ 0.04	0.10	0.15											●																					
			160408S-SE-2S	RE 0.8	a _p ▶ 0.05	f _n ▶ 0.05	0.10	0.15												●																				
UNIVERSAL		VCGW	110304S-UE-2S	RE 0.4	a _p ▶ 0.06	f _n ▶ 0.06	0.13	0.20											●																					
			160404S-UE-2S	RE 0.4	a _p ▶ 0.06	f _n ▶ 0.06	0.13	0.20													●																			
			160408S-UE-2S	RE 0.8	a _p ▶ 0.06	f _n ▶ 0.06	0.13	0.20														●																		

● stock standard, ○ non-standard stock

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HOLDERS INTERNAL p. 157

TURNING

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TURNING

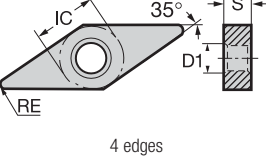
THREADING

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ACCESSORIES

VN	PCBN Negative				ISO513	BL				BH																			
	Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL														
 <p>4 edges</p>	1604□	9.525	4.76	3.81	P	80	240			140	300																		
					M																								
					K					400	300	200	180																
					N					1200	1400	1200	1000																
					S																								
GRADE APPLICATION AREA	Stable machining, continuous cut																												
■ main application ■ applicable	General machining, light interruption																												
	Unstable machining, interrupted cut																												
					H	120	240	100	220	80	200	60	160	60	160	60	180	40	180	40	160								

SHARP SE H	VNGA	160404S-SE-4V	RE 0.4	a _p ▶ 0.06 f _n ▶ 0.06	0.13 0.12	0.20 0.18	○											
vertical		160408S-SE-4V	RE 0.8	a _p ▶ 0.06 f _n ▶ 0.06	0.13 0.13	0.20 0.20	○											

UNIVERSAL UE K H	VNGA	160404S-UE-4V	RE 0.4	a _p ▶ 0.07 f _n ▶ 0.08	0.16 0.14	0.25 0.20	○	●											
vertical		160408S-UE-4V	RE 0.8	a _p ▶ 0.07 f _n ▶ 0.08	0.16 0.15	0.25 0.22	○	●											

● stock standard, ○ non-standard stock



WN			PCBN Negative				ISO513	BL				BH																								
			Size	IC	S	D1		P	NBL050C	NBL150C	NBL250C	NBL350C	NBH450C	NBH500C	NBH900U	NBH950U	◀ SINTERED POWDER METAL																			
			0804□□	12.70	4.76	5.16		M	80 240				140 300																							
							K					400 1200	300 1400	200 1200	180 1000																					
							N																													
							S																													
							H																													
			GRADE APPLICATION AREA				Stable machining, continuous cut																													
				General machining, light interruption																																
				Unstable machining, interrupted cut																																

SHARP	SE	vertical	WNGA	080404S-SE-6V	RE 0.4	a _p ▶ f _n ▶	0.06 0.06	0.13 0.12	0.20 0.18																												
				080408S-SE-6V	RE 0.8	a _p ▶ f _n ▶	0.06 0.06	0.13 0.13	0.20 0.20																												
UNIVERSAL	UE	vertical	WNGA	080404S-UE-6V	RE 0.4	a _p ▶ f _n ▶	0.07 0.08	0.16 0.14	0.25 0.20																												
				080408S-UE-6V	RE 0.8	a _p ▶ f _n ▶	0.07 0.08	0.16 0.15	0.25 0.22																												
				080412S-UE-6V	RE 1.2	a _p ▶ f _n ▶	0.07 0.08	0.16 0.16	0.25 0.24																												
REINFORCED	RE	vertical	WNGA	080404S-RE-6V	RE 0.4	a _p ▶ f _n ▶	0.08 0.08	0.17 0.14	0.26 0.20																												
				080408S-RE-6V	RE 0.8	a _p ▶ f _n ▶	0.08 0.08	0.17 0.16	0.26 0.24																												
				080412S-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

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HOLDERS INTERNAL
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TURNING Ceramic

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CC	CERAMIC Positive					ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC		
	Size	IC	S	D1	AN		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750	
<p>2 edges</p>	09T3□□	9.525	3.93	4.40	7°	P												
	1204□□	12.70	4.76	5.50	7°	M												
						K	300 600			500 1000	400 1000	400 800						
						N												
						S							150 350	150 300	150 400	200 500	200 400	
					H		80 200	60 180	50 150									
GRADE APPLICATION AREA	Stable machining, continuous cut																	
main application	General machining, light interruption																	
applicable	Unstable machining, interrupted cut																	
UNIVERSAL 	CCGW 09T308-GP	RE 0.8	K a _p ▶ 1.00	2.50 4.00														
			f _n ▶ 0.12	0.23 0.34														
	CCGW 120408-GP	RE 0.8	K a _p ▶ 1.00	2.50 4.00														
			f _n ▶ 0.13	0.26 0.36														
	CCGW 120412-GP	RE 1.2	K a _p ▶ 1.00	2.50 4.00														
f _n ▶ 0.14			0.28 0.42															
			K a _p ▶ 1.00	2.50 4.00														
			f _n ▶ 0.16	0.31 0.46														

● stock standard

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CN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC					
	Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750				
<p>4 edges</p>					P															
	1204□	12.70	4.76	(5.16)	M															
	1207□	12.70	7.94	-	K	300 600		500 1000	400 1000	400 800										
	1606□	15.87	6.35	6.35	N															
						S						150 350	150 300	150 400	200 500	200 400				
					H	80 200	60 180	50 150												
GRADE APPLICATION AREA	Stable machining, continuous cut																			
main application	General machining, light interruption																			
applicable	Unstable machining, interrupted cut																			
SHARP	T01020 H NAC150 coated	CNGA	120404-CC	H	a _p ▶ 0.20 RE 0.4	f _n ▶ 0.04	0.70 0.08	1.20 0.12	●	●										
			120408-CC	H	a _p ▶ 0.20 RE 0.8	f _n ▶ 0.05	0.70 0.10	1.20 0.15	●	●										
			120412-CC	H	a _p ▶ 0.20 RE 1.2	f _n ▶ 0.06	0.70 0.13	1.20 0.20	●	●										
	UNIVERSAL	T02020 K H S 	CNGA	120404-GP	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22		●									
					K	a _p ▶ 1.00 RE 0.4	f _n ▶ 0.10	2.50 0.19	4.00 0.28			○								
					H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30		●	●								
				120408-GP	S	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.27	4.00 0.40					▽		▲				
					H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		●	●								
					S	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50					▽		▲				
CNMA			120408-GP	H	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.14	2.50 0.27	4.00 0.40		●										
				H	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.15	2.50 0.30	4.00 0.45			○									
				K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.27	4.00 0.40				○	●	○						
CNMA			120412-GP	K	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50				●	●	●						
				K	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.20	2.50 0.36	4.00 0.52				○	●	○						
				K	a _p ▶ 2.00 RE 1.2	f _n ▶ 0.22	4.50 0.39	7.00 0.56					●							
CNMA	160612-GP	K	a _p ▶ 2.00 RE 1.2	f _n ▶ 0.22	4.50 0.39	7.00 0.56					●									
		K	a _p ▶ 2.00 RE 1.6	f _n ▶ 0.24	4.50 0.43	7.00 0.62					●									
		K	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.15	2.50 0.30	4.00 0.45			○											
S01525 H coated	CNGA	120404-GS	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22	●												
			H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●												
			H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34	●												
S02020 H	CNGA	120404-GS	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22		▽											
			H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30		●											
			H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		●											

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



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DRILLING

ACCESSORIES

CN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC						
	Size	IC	S	D1		P	NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSAG600	NSAG650	NSAG000	NWR700	NWR750				
	1204□	12.70	4.76	(5.16)	M																
	1207□	12.70	7.94	-	K	300 600			500 1000	400 1000	400 800										
	1606□	15.87	6.35	6.35	N																
					S							150 350	150 300	150 400	200 500	200 400					
					H	80 200	60 180	50 150													
GRADE APPLICATION AREA	Stable machining, continuous cut																				
main application	General machining, light interruption																				
applicable	Unstable machining, interrupted cut																				
UNIVERSAL	without hole	CNGN	120708-GP	H	a _p	0.40	1.20	2.00													
				RE 0.8	f _n	0.10	0.20	0.30													
		K S	a _p	1.00	2.50	4.00															
		RE 0.8	f _n	0.14	0.27	0.40															
		H	a _p	0.40	1.20	2.00															
		RE 1.2	f _n	0.12	0.23	0.34															
	120712-GP	K S	a _p	1.00	2.50	4.00															
		RE 1.2	f _n	0.20	0.35	0.50															
	120716-GP	H	a _p	0.40	1.20	2.00															
		RE 1.6	f _n	0.14	0.26	0.38															
	CNMN	120412-GP	K	a _p	1.00	2.50	4.00														
			RE 1.2	f _n	0.20	0.35	0.50														
120416-GP	K	a _p	1.00	2.50	4.00																
	RE 1.6	f _n	0.20	0.36	0.52																
with dimple	CNGX	120708-GP	H	a _p	0.40	1.20	2.00														
			RE 0.8	f _n	0.10	0.20	0.30														
	H	a _p	0.40	1.20	2.00																
	RE 1.2	f _n	0.12	0.23	0.34																
	CNMX	120712-GP	K S	a _p	1.00	2.50	4.00														
			RE 1.2	f _n	0.20	0.35	0.50														
120716-GP	K S	a _p	1.00	2.50	4.00																
	RE 1.6	f _n	0.20	0.36	0.52																
REINFORCED	without hole	CNGN	120712-HI	H	a _p	0.40	1.20	2.00													
				RE 1.2	f _n	0.14	0.26	0.38													
	120716-HI	H	a _p	0.40	1.20	2.00															
		RE 1.6	f _n	0.18	0.31	0.44															
WIPER	CNGA	120410-WK	H	a _p	1.00	2.50	4.00														
			RE 1.0	f _n	0.20	0.35	0.50														
	CNGA	120410-WH	H	a _p	0.40	1.20	2.00														
			RE 1.0	f _n	0.12	0.26	0.40														

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

* T01520



DN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC			
	Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750		
	1506□	12.70	6.35	5.16	P													
	1507□	12.70	7.94	-	M													
					K	300 600		500 1000	400 1000	400 800								
					N													
					S						150 350	150 300	150 400	200 500	200 400			
				H	80 200	60 180	50 150											
GRADE APPLICATION AREA	Stable machining, continuous cut				+													
main application	General machining, light interruption				-													
applicable	Unstable machining, interrupted cut				+													
SHARP		DNGA	150604-CC	H	a _p ▶ 0.20 RE 0.4	f _n ▶ 0.04	0.70 0.08	1.20 0.12	●	●								
			150608-CC	H	a _p ▶ 0.20 RE 0.8	f _n ▶ 0.05	0.70 0.10	1.20 0.15	●	●								
			150612-CC	H	a _p ▶ 0.20 RE 1.2	f _n ▶ 0.06	0.70 0.13	1.20 0.20		●								
UNIVERSAL		DNGA	150604-GP	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22		●								
			150608-GP	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30		●	●							
			150612-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		●	●							
			150616-GP	H	a _p ▶ 0.40 RE 1.6	f _n ▶ 0.14	1.20 0.26	2.00 0.38		○								
			150612-GP	K	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50			●							
UNIVERSAL		DNGA	150604-GS	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22	●									
			150608-GS	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●									
			150612-GS	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		○								
UNIVERSAL		DNGN	150708-GP	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30		○								
			150712-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		○								
			150716-GP	H	a _p ▶ 0.40 RE 1.6	f _n ▶ 0.14	1.20 0.26	2.00 0.38		○								

● stock standard, ○ non-standard stock



TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

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ACCESSORIES

RC		CERAMIC Positive				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC					
		Size	IC	S	D1		MAC150	MAC200	MAC250	NSN350	NSN400	NSN450	NSA600	NSA650	NSA6000	NWR700	NWR750				
		0606□□	6.35	6.35	-	P															
		0907□□	9.525	7.94	-	M															
		1207□□	12.70	7.94	-	K		300 600		500 1000	400 1000	400 800									
		1510□□	15.87	10.0	-	N															
		1910□□	19.05	10.0	-	S							150 350	150 300	150 400	200 500	200 400				
							H	80 200	60 180	50 150											
GRADE APPLICATION AREA		Stable machining, continuous cut																			
■ main application		General machining, light interruption																			
■ applicable		Unstable machining, interrupted cut																			
SHARP		T01020 S	RCGX 060600-CC	S	a _p ▶ 1.00 f _n ▶ 0.15	1.50 0.30	2.00 0.45										○				
			RCGX 090700-CC	S	a _p ▶ 1.00 f _n ▶ 0.20	2.00 0.38	3.00 0.56										○				
			RCGX 120700-CC	S	a _p ▶ 1.00 f _n ▶ 0.22	2.50 0.40	4.00 0.58										●				
UNIVERSAL		T02020 S H	RCGX 090700-GP	H	a _p ▶ 0.60 f _n ▶ 0.12	1.80 0.26	3.00 0.40	●	●	○											
		S		a _p ▶ 1.00 f _n ▶ 0.22	2.00 0.35	3.00 0.58						▽		○*	○*						
		NAC150 coated	RCGX 120700-GP	H	a _p ▶ 0.60 f _n ▶ 0.13	1.80 0.28	3.00 0.43	○	○	○											
				S	a _p ▶ 1.00 f _n ▶ 0.24	2.00 0.42	3.00 0.60						▽	▽		○*	○*				
S02020 H		RCGX 060600-GS	H	a _p ▶ 0.40 f _n ▶ 0.10	1.20 0.24	2.00 0.38		○													
		RCGX 060700-GS	H	a _p ▶ 0.40 f _n ▶ 0.10	1.20 0.24	2.00 0.38		●													
REINFORCED		P15015 H	RCGX 090700-HI	H	a _p ▶ 0.60 f _n ▶ 0.15	1.80 0.30	3.00 0.45	●	●	●											
			RCGX 120700-HI	H	a _p ▶ 0.60 f _n ▶ 0.18	1.80 0.34	3.00 0.50	●	●	●											
		NAC150 coated	RCGX 151000-HI	H	a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.40	4.00 0.60		○	●											
RCGX 191000-HI	H			a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.45	4.00 0.70		○	○												

● stock standard, ○ non-standard stock, ▽ stock exhaustion

* T01520

RN		CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC			
		Size	IC	S	D1		MAC150	MAC200	MAC250	NSN350	NSN400	NSN450	NSA600	NSA650	NSA6000	NWR700	NWR750		
						P													
	1204□□	12.70	4.76	-		M													
	1207□□	12.70	7.94	-		K	300 600		500 1000	400 1000	400 800								
	1907□□	19.05	7.94	-		N													
						S						150 350	150 300	150 400	200 500	200 400			
						H	80 200	60 180	50 150										
GRADE APPLICATION AREA		Stable machining, continuous cut																	
■ main application		General machining, light interruption																	
■ applicable		Unstable machining, interrupted cut																	
SHARP		RNGN	120400-CC	S	a _p ▶ 1.00 f _n ▶ 0.22	2.50 0.40	4.00 0.58												
		RNGN	120700-CC	S	a _p ▶ 1.00 f _n ▶ 0.22	2.50 0.40	4.00 0.58												
UNIVERSAL		RNGN	120400-GP	H	a _p ▶ 0.60 f _n ▶ 0.13	1.80 0.28	3.00 0.43		●										
				S	a _p ▶ 1.00 f _n ▶ 0.24	2.00 0.42	3.00 0.60						○*	○*					
		RNGN	120700-GP	H	a _p ▶ 0.60 f _n ▶ 0.13	1.80 0.28	3.00 0.43	○	●	○									
				S	a _p ▶ 1.00 f _n ▶ 0.24	2.00 0.42	3.00 0.60				○	▽	▽			○*	○*		
	RNGN	190700-GP	S	a _p ▶ 1.00 f _n ▶ 0.30	2.50 0.55	4.00 0.80									▽*	▽*			
REINFORCED		RNGN	120700-T20015	H	a _p ▶ 0.60 f _n ▶ 0.18	1.80 0.34	3.00 0.50		▽		▽								
		RNGN	120700-HT	H	a _p ▶ 0.60 f _n ▶ 0.18	1.80 0.34	3.00 0.50		●		●								
		RNGN	120700-HI	H	a _p ▶ 0.60 f _n ▶ 0.18	1.80 0.34	3.00 0.50		●	●	●								

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

* T01520

TURNING

THREADING

GROOVING

MILLING

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ACCESSORIES

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ACCESSORIES

SC	CERAMIC Positive					ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC							
	Size	IC	S	D1	AN		P	NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750					
	<p>4 edges</p>	09T3□	9.525	3.93	4.40		7°	M															
1204□	12.70	4.76	5.50	7°	K		300 600		500 1000	400 1000	400 800												
						N																	
						S							150 350	150 300	150 400	200 500	200 400						
						H	80 200	60 180	50 150														
GRADE APPLICATION AREA	Stable machining, continuous cut					+ Hardness - Toughness +																	
main application	General machining, light interruption																						
applicable	Unstable machining, interrupted cut																						
UNIVERSAL	T02020 K 																						
	SCGW	09T308-GP	K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.12	2.50 0.23	4.00 0.34																
SCGW	120408-GP	K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.28	4.00 0.42																	

● stock standard



SN		CERAMIC Negative			ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC				
		Size	IC	S		D1	NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750		
<p>8 edges</p>					P														
	0904 □	9.525	4.76	-	M														
	1204 □	12.70	4.76	(5.16)	K	300 600			500 1000	400 1000	400 800								
	1207 □	12.70	7.94	-	N														
					S							150 350	150 300	150 400	200 500	200 400			
				H	80 200	60 180	50 150												
GRADE APPLICATION AREA		Stable machining, continuous cut			+ Hardness - Toughness +														
main application		General machining, light interruption																	
applicable		Unstable machining, interrupted cut																	
SHARP	T01020 H	SNGA	120404-CC	H	a _p ▶ 0.20 RE 0.4	f _n ▶ 0.04	0.70 0.08	1.20 0.12	●										
	120408-CC		H	a _p ▶ 0.20 RE 0.8	f _n ▶ 0.05	0.70 0.10	1.20 0.15	●											
	120412-CC		H	a _p ▶ 0.20 RE 1.2	f _n ▶ 0.06	0.70 0.13	1.20 0.20	●											
SHARP	T01020 S	SNGN	120708-CC	S	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.28	4.00 0.42					○						
	120712-CC		S	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50						●						
SHARP	T02020 K H	SNGA	120404-GP	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22	●										
			120408-GP	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●										
			120412-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34	●										
		SNMA	120408-GP	K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.27	4.00 0.40			●								
			120412-GP	K	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50			●								
			120416-GP	K	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.20	2.50 0.36	4.00 0.52			○								
UNIVERSAL	T02020 K H	SNGN	090404-GP	K	a _p ▶ 1.00 RE 0.4	f _n ▶ 0.12	2.50 0.25	4.00 0.38					▽						
			090408-GP	K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.28	4.00 0.42					▽						
		SNGN	120404-GP	K	a _p ▶ 1.00 RE 0.4	f _n ▶ 0.12	2.50 0.25	4.00 0.38					▽						
			120408-GP	K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.28	4.00 0.42			●								
			120412-GP	K	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50			●	●				▽*			
		SNGN	120708-GP	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●	●									
			120712-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		●									
			120716-GP	H	a _p ▶ 0.40 RE 1.6	f _n ▶ 0.14	1.20 0.27	2.00 0.40		○									
			SNMN	120416-GP	K	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.20	2.50 0.36	4.00 0.52			●							
UNIVERSAL	T02020 K S H	SNGX	120712-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34	●										
			120716-GP	H	a _p ▶ 0.40 RE 1.6	f _n ▶ 0.14	1.20 0.27	2.00 0.40		●									
		SNMX	120712-GP	K S	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50		○	●	○			▲				
			120716-GP	K S	a _p ▶ 1.00 RE 1.6	f _n ▶ 0.20	2.50 0.36	4.00 0.52		○	●	○	▽		▲				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

*T01520



TURNING

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ACCESSORIES

SN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC				
	Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750			
<p>8 edges</p>	0904□□	9.525	4.76	-	P														
	1204□□	12.70	4.76	(5.16)	M														
	1207□□	12.70	7.94	-	K	300 600			500 1000	400 1000	400 800								
					N							150 350	150 300	150 400	200 500	200 400			
					S														
					H	80 200	60 180	50 150											
GRADE APPLICATION AREA	Stable machining, continuous cut																		
main application	General machining, light interruption				+														
applicable	Unstable machining, interrupted cut				-														
REINFORCED		SNGN	120716-HI	RE 1.6	a _p ▶ 1.00 f _n ▶ 0.18	2.50 0.30	4.00 0.42												
			120720-HI	RE 2.0	a _p ▶ 1.00 f _n ▶ 0.20	2.50 0.32	4.00 0.44												
			120724-HI	RE 2.4	a _p ▶ 1.00 f _n ▶ 0.22	2.50 0.35	4.00 0.48												

○ non-standard stock

TN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC	
	Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750
<p>6 edges</p>	1604□	9.525	4.76	(3.81)	P											
	1607□	12.70	7.94	-	M											
					K	300 600		500 1000	400 1000	400 800						
					N											
					S						150 350	150 300	150 400	200 500	200 400	
				H	80 200	60 180	50 150									
GRADE APPLICATION AREA	Stable machining, continuous cut				+											
main application	General machining, light interruption				-											
applicable	Unstable machining, interrupted cut				+											

SHARP	T01020 H	TNGA	160404-CC	H	a _p	f _n	RE	0.20	0.70	1.20	●	●						
				RE 0.4	f _n	0.04	0.08	0.12	●	●								
UNIVERSAL	T02020 K H	TNGA	160404-GP	H	a _p	f _n	RE	0.40	1.20	2.00		●						
				RE 0.4	f _n	0.06	0.14	0.22		●								
				H	a _p	f _n	RE	0.8	0.10	0.20	0.30		●	●				
		K	a _p	f _n	RE	0.8	1.00	2.50	4.00				●					
		H	a _p	f _n	RE	1.2	0.12	0.23	0.34		●	●						
		K	a _p	f _n	RE	1.2	1.00	2.50	4.00				●					
	T02020 K H	TNGN	160408-GP	K	a _p	f _n	RE	0.8	1.00	2.50	4.00			●				
				H	a _p	f _n	RE	0.8	0.10	0.20	0.30		○					
				K	a _p	f _n	RE	0.8	1.00	2.50	4.00				○			
		160708-GP	H	a _p	f _n	RE	1.2	0.12	0.23	0.34		○						
			K	a _p	f _n	RE	1.2	1.00	2.50	4.00				○				
			H	a _p	f _n	RE	1.2	0.12	0.23	0.34				○				
S01525 H	TNGA	160404-GS	H	a _p	f _n	RE	0.4	0.40	1.20	2.00	●							
			RE 0.4	f _n	0.06	0.14	0.22		●									
			H	a _p	f _n	RE	0.8	0.10	0.20	0.30		●						
S02020 H	TNGA	160404-GS	H	a _p	f _n	RE	0.4	0.40	1.20	2.00		●						
			RE 0.4	f _n	0.06	0.14	0.22		●									
			H	a _p	f _n	RE	0.8	0.10	0.20	0.30		●						
160408-GS	H	a _p	f _n	RE	1.2	0.12	0.23	0.34		○								
	RE 1.2	f _n	0.12	0.23	0.34		○											
	H	a _p	f _n	RE	1.2	0.12	0.23	0.34		○								

● stock standard, ○ non-standard stock



TURNING

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ACCESSORIES

TP	CERAMIC Positive				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC	
	Size	IC	S	AN		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750
	1103□	6.35	3.18	11°	P											
	1603□	9.525	3.18	11°	M											
					K	300 600		500 1000	400 1000	400 800						
					N											
					S						150 350	150 300	150 400	200 500	200 400	
					H	80 200	60 180	50 150								
GRADE APPLICATION AREA	Stable machining, continuous cut				+											
main application	General machining, light interruption				-											
applicable	Unstable machining, interrupted cut				+											
SHARP		TPGN	110302-CC	H	a _p ▶ 0.20 RE 0.2 f _n ▶ 0.04	0.60 0.06	1.00 0.08	●	●							
			110304-CC	H	a _p ▶ 0.20 RE 0.4 f _n ▶ 0.04	0.60 0.08	1.00 0.12	●	●							
		110308-CC	H	a _p ▶ 0.20 RE 0.8 f _n ▶ 0.05	0.60 0.10	1.00 0.15	●	●								
		TPGN	160304-CC	H	a _p ▶ 0.20 RE 0.4 f _n ▶ 0.04	0.70 0.08	1.20 0.12	●	●							
			160308-CC	H	a _p ▶ 0.20 RE 0.8 f _n ▶ 0.05	0.70 0.10	1.20 0.15	●	●							
		160312-CC	H	a _p ▶ 0.20 RE 1.2 f _n ▶ 0.06	0.70 0.13	1.20 0.20	●									
	UNIVERSAL		TPGN	110302-GP	H	a _p ▶ 0.40 RE 0.2 f _n ▶ 0.05	1.20 0.10	2.00 0.15	●							
				110304-GP	H	a _p ▶ 0.40 RE 0.4 f _n ▶ 0.07	1.20 0.15	2.00 0.23	●							
				K	a _p ▶ 1.00 RE 0.4 f _n ▶ 0.10	2.00 0.20	3.00 0.30				○					
			110308-GP	H	a _p ▶ 0.40 RE 0.8 f _n ▶ 0.08	1.20 0.17	2.00 0.26	●								
K				a _p ▶ 1.00 RE 0.8 f _n ▶ 0.12	2.00 0.23	3.00 0.34				●						
H				a _p ▶ 0.50 RE 0.4 f _n ▶ 0.08	1.50 0.16	2.50 0.24	●									
TPGN			160304-GP	K	a _p ▶ 1.00 RE 0.4 f _n ▶ 0.12	2.50 0.23	4.00 0.34				○					
			160308-GP	H	a _p ▶ 0.50 RE 0.8 f _n ▶ 0.10	1.50 0.20	2.50 0.30	●								
			K	a _p ▶ 1.00 RE 0.8 f _n ▶ 0.14	2.50 0.28	4.00 0.42				●						
160312-GP			K	a _p ▶ 1.00 RE 1.2 f _n ▶ 0.16	2.50 0.31	4.00 0.46				●						
S01525 H	TPGN		110302-GS	H	a _p ▶ 0.40 RE 0.2 f _n ▶ 0.05	1.20 0.10	2.00 0.15	○								
			110304-GS	H	a _p ▶ 0.40 RE 0.4 f _n ▶ 0.07	1.20 0.15	2.00 0.23	●								
		110308-GS	H	a _p ▶ 0.40 RE 0.8 f _n ▶ 0.08	1.20 0.17	2.00 0.26	○									
	TPGN	160304-GS	H	a _p ▶ 0.50 RE 0.4 f _n ▶ 0.08	1.50 0.16	2.50 0.24	●									
		160308-GS	H	a _p ▶ 0.50 RE 0.8 f _n ▶ 0.10	1.50 0.20	2.50 0.30	●									

● stock standard, ○ non-standard stock

VN	CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC			
	Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750		
					P													
	1604□□	9.525	4.76	3.81	M													
					K	300 600			500 1000	400 1000	400 800							
					N													
					S							150 350	150 300	150 400	200 500	200 400		
					H	80 200	60 180	50 150										
GRADE APPLICATION AREA	Stable machining, continuous cut																	
main application	General machining, light interruption																	
applicable	Unstable machining, interrupted cut																	
SHARP	 NAC150 coated	VNGA	160404-CC	H	a _p ▶ 0.20 RE 0.4	f _n ▶ 0.04	0.70 0.08	1.20 0.12	●	●								
			160408-CC	H	a _p ▶ 0.20 RE 0.8	f _n ▶ 0.05	0.70 0.10	1.20 0.15	●	●								
			160412-CC	H	a _p ▶ 0.20 RE 1.2	f _n ▶ 0.06	0.70 0.13	1.20 0.20	○	○								
	 T02020 K H	VNGA	160404-GP	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22		●								
				K	a _p ▶ 1.00 RE 0.4	f _n ▶ 0.10	2.50 0.19	4.00 0.28		○								
			160408-GP	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30		●	○							
				K	a _p ▶ 1.00 RE 0.8	f _n ▶ 0.14	2.50 0.27	4.00 0.40		●								
			160412-GP	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34		○	○							
				K	a _p ▶ 1.00 RE 1.2	f _n ▶ 0.20	2.50 0.35	4.00 0.50			○							
UNIVERSAL	 coated	VNGA	160404-GS	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22	●									
			160408-GS	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●									
			160412-GS	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34	○									
 S02020 H	VNGA	160404-GS	H	a _p ▶ 0.40 RE 0.4	f _n ▶ 0.06	1.20 0.14	2.00 0.22	●										
		160408-GS	H	a _p ▶ 0.40 RE 0.8	f _n ▶ 0.10	1.20 0.20	2.00 0.30	●										
		160412-GS	H	a _p ▶ 0.40 RE 1.2	f _n ▶ 0.12	1.20 0.23	2.00 0.34	○										

● stock standard, ○ non-standard stock



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ACCESSORIES

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WN		CERAMIC Negative				ISO513	Al ₂ O ₃ +TiCN			Si ₃ N ₄			SiAlON			Al ₂ O ₃ +SiC			
		Size	IC	S	D1		NAC150	NAC200	NAC250	NSM350	NSM400	NSM450	NSA600	NSA650	NSA6000	NWR700	NWR750		
<p>6 edges</p>		P																	
		M																	
		K					300	600		500	400	400							
		N								1000	1000	800							
		S											150	150	150	200	200		
		H				80	200	60	180	50	150								
GRADE APPLICATION AREA		Stable machining, continuous cut				+													
main application		General machining, light interruption				-													
applicable		Unstable machining, interrupted cut				+													
SHARP		WNGA	080404-CC	H	a _p ▶ 0.20 RE 0.4 f _n ▶ 0.04	0.70 0.08	1.20 0.12	●											
			080408-CC	H	a _p ▶ 0.20 RE 0.8 f _n ▶ 0.05	0.70 0.10	1.20 0.15	●											
			080412-CC	H	a _p ▶ 0.20 RE 1.2 f _n ▶ 0.06	0.70 0.13	1.20 0.20	●											
UNIVERSAL		WNGA	080404-GP	H	a _p ▶ 0.40 RE 0.4 f _n ▶ 0.06	1.20 0.14	2.00 0.22	●											
			080408-GP	H	a _p ▶ 0.40 RE 0.8 f _n ▶ 0.10	1.20 0.20	2.00 0.30	●											
				K	a _p ▶ 1.00 RE 0.8 f _n ▶ 0.14	2.50 0.27	4.00 0.40	●											
			080412-GP	H	a _p ▶ 0.40 RE 1.2 f _n ▶ 0.12	1.20 0.23	2.00 0.34	●											
				K	a _p ▶ 1.00 RE 1.2 f _n ▶ 0.20	2.50 0.35	4.00 0.50	●											

● stock standard





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CC	DIAMOND Positive					ISO513	DP (PCD)					PD	DM													
	Size	IC	S	D1	AN		P	ND050	ND100	ND120	ND150			ND190	ND300	ND500										
								500	500	500	500			500	1000	1000										
<p>1 edge</p>	MICRO CC	3.50	1.40	1.90	7°	M																				
	0602□□	6.35	2.38	2.80	7°	K																				
	09T3□□	9.525	3.97	4.40	7°	N	500	500	500	500	500	1000	1000													
	1204□□	12.70	4.76	5.50	7°	S	1500	2000	2000	2500	2500	3000	3000													
						H	50				10	30	← HARD METAL (Co ≤ 16%)													
GRADE APPLICATION AREA	Stable machining, continuous cut					+ Hardness - Toughness - +																				
main application	General machining, light interruption																									
applicable	Unstable machining, interrupted cut																									
STANDARD N <p>tip angle: 7°</p>	CCGT	060202	RE 0.2	a_p	0.40	1.00	1.60	●																		
			LE 2.8	f_n	0.05	0.10	0.15		○	●		○														
		060204	RE 0.4	a_p	0.40	1.00	1.60																			
			LE 2.8	f_n	0.10	0.15	0.20		○	●																
		060208	RE 0.8	a_p	0.40	1.00	1.60			●																
			LE 2.7	f_n	0.15	0.20	0.25		○	●																
	CCGT	09T302	RE 0.2	a_p	0.40	1.00	1.60			●																
			LE 2.8	f_n	0.05	0.10	0.15																			
		09T304	RE 0.4	a_p	0.40	1.00	1.60	●	●		●		○	○												
			LE 2.8	f_n	0.10	0.15	0.20		○	●																
		09T308	RE 0.8	a_p	0.40	1.00	1.60	○	●		●		○	○												
			LE 2.7	f_n	0.15	0.20	0.25																			
CCGT	120404	RE 0.4	a_p	0.40	1.00	1.60			●																	
		LE 2.8	f_n	0.10	0.15	0.20																				
	120408	RE 0.8	a_p	0.40	1.00	1.60			○																	
		LE 2.7	f_n	0.15	0.20	0.25																				
	CCGT	060204-LRG	RE 0.4	a_p	0.40	1.20	2.00			○																
			LE 3.2	f_n	0.10	0.15	0.20																			
09T304-LRG		RE 0.4	a_p	0.40	1.50	2.60	●	●																		
		LE 4.3	f_n	0.10	0.15	0.20																				
09T308-LRG		RE 0.8	a_p	0.40	1.50	2.60	●	●																		
		LE 4.2	f_n	0.15	0.20	0.25																				
CCGT	120404-LRG	RE 0.4	a_p	0.40	1.50	2.60			○																	
		LE 4.3	f_n	0.10	0.15	0.20																				
	120408-LRG	RE 0.8	a_p	0.40	1.50	2.60			○																	
		LE 4.2	f_n	0.15	0.20	0.25																				
	MICROBORING 	MICRO	CC.R02	RE 0.2	a_p	0.20	0.60	1.00	●		●		●													
				LE 1.5	f_n	0.05	0.10	0.15																		
CC.R04		RE 0.4	a_p	0.20	0.60	1.00	●		●		●															
		LE 1.5	f_n	0.10	0.15	0.20																				
STANDARD N 	CCGW	060202	RE 0.2	a_p	0.40	1.00	1.60	○	●		○															
			LE 2.8	f_n	0.05	0.10	0.15																			
		060204	RE 0.4	a_p	0.40	1.00	1.60	●	●		●															
			LE 2.8	f_n	0.10	0.15	0.20																			
		060208	RE 0.8	a_p	0.40	1.00	1.60	●	●		●															
			LE 2.7	f_n	0.15	0.20	0.25																			
	CCGW	09T302	RE 0.2	a_p	0.40	1.00	1.60			●																
			LE 2.8	f_n	0.05	0.10	0.15																			
		09T304	RE 0.4	a_p	0.40	1.00	1.60	●	●		●		○	○												
			LE 2.8	f_n	0.10	0.15	0.20																			
		09T308	RE 0.8	a_p	0.40	1.00	1.60	●	●		●		○	○												
			LE 2.7	f_n	0.15	0.20	0.25																			
CCGW	120404	RE 0.4	a_p	0.40	1.00	1.60	○	●		○																
		LE 2.8	f_n	0.10	0.15	0.20																				
	120408	RE 0.8	a_p	0.40	1.00	1.60	○	●		○																
		LE 2.7	f_n	0.15	0.20	0.25																				

● stock standard, ○ non-standard stock



CC		DIAMOND Positive					ISO513	DP (PCD)					PD	DM								
								ND050	ND100	ND120	ND150	ND190	ND0300	ND0500								
	Size	IC	S	D1	AN	P																
	MICRO CC	3.50	1.40	1.90	7°	M																
	0602□□	6.35	2.38	2.80	7°	K																
	09T3□□	9.525	3.97	4.40	7°	N	500 1500	500 2000	500 2000	500 2500	500 2500	1000 3000	1000 3000									
	1204□□	12.70	4.76	5.50	7°	S	50 100															
GRADE APPLICATION AREA						Stable machining, continuous cut	+		-													
main application						General machining, light interruption	-		+													
applicable						Unstable machining, interrupted cut	+		-													
FLAT TIP		CCGW	060204-LRG	RE 0.4 LE 3.2	a _p ▶ 0.40 f _n ▶ 0.10	1.20 0.15	2.00 0.20	●														
		CCGW	09T304-LRG	RE 0.4 LE 4.3	a _p ▶ 0.40 f _n ▶ 0.10	1.50 0.15	2.60 0.20	●														
			09T308-LRG	RE 0.8 LE 4.2	a _p ▶ 0.40 f _n ▶ 0.15	1.50 0.20	2.60 0.25	●														
		CCGW	120404-LRG	RE 0.4 LE 4.3	a _p ▶ 0.40 f _n ▶ 0.10	1.50 0.15	2.60 0.20	●														
			120408-LRG	RE 0.8 LE 4.2	a _p ▶ 0.40 f _n ▶ 0.15	1.50 0.20	2.60 0.25	●														
CHIPBREAKER		CCGX	060202-CBF	RE 0.2 LE 3.3	a _p ▶ 0.20 f _n ▶ 0.04	0.60 0.08	1.00 0.12		●													
			060204-CBF	RE 0.4 LE 3.3	a _p ▶ 0.20 f _n ▶ 0.05	0.60 0.10	1.00 0.15		●													
		CCGX	09T302-CBF	RE 0.2 LE 4.3	a _p ▶ 0.20 f _n ▶ 0.04	0.60 0.08	1.00 0.12		●													
			09T304-CBF	RE 0.4 LE 4.3	a _p ▶ 0.20 f _n ▶ 0.15	0.60 0.10	1.00 0.15		●													
CHIPBREAKER		CCGX	060204-CBG	RE 0.4 LE 3.3	a _p ▶ 0.40 f _n ▶ 0.10	1.20 0.15	2.00 0.20		●													
			09T304-CBG	RE 0.4 LE 4.3	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.15	2.50 0.20		●													
		09T308-CBG	RE 0.8 LE 4.2	a _p ▶ 0.50 f _n ▶ 0.15	1.50 0.20	2.50 0.25		●														
FULL EDGE		CCGX	060204*/L-1S	RE 0.4 LE 6.5	a _p ▶ 0.50 f _n ▶ 0.10	2.00 0.15	3.50 0.20		●													
			09T304*/L-1S	RE 0.4 LE 9.7	a _p ▶ 0.50 f _n ▶ 0.10	3.00 0.15	5.50 0.20		●													

● stock standard

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CN	DIAMOND Negative				ISO513	DP (PCD)					PD	DM	
	Size	IC	S	D1		P	ND050	ND100	ND120	ND150			ND190
	MICRO CN	7.50	3.18	3.60	P								
	1204□	12.70	4.76	5.16	M								
					K								
					N	500	500	500	500	500	1000	1000	
					S	1500	2000	2000	2500	2500	3000	3000	
				H	50					10	30		
						100							
GRADE APPLICATION AREA						Stable machining, continuous cut							
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: orange; margin-right: 5px;"></div> main application </div>						General machining, light interruption							
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: lightgrey; margin-right: 5px;"></div> applicable </div>						Unstable machining, interrupted cut							
						← HARD METAL (Co ≤ 16%)							

SLANT TIP	STANDARD N	CNGM	120404	RE 0.4	a _p ▶	0.40	1.00	1.60	●										
				LE 2.8	f _n ▶	0.10	0.15	0.20											
			120408	RE 0.8	a _p ▶	0.40	1.00	1.60	●										
			120408-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60	○										
			120408-LRG	RE 4.2	a _p ▶	0.15	0.20	0.25	○										
			CN.R02-LRG	RE 0.2	a _p ▶	0.40	1.20	2.00	●										
			CN.R04-LRG	RE 0.4	a _p ▶	0.40	1.20	2.00	●										
			CN.R08-LRG	RE 0.8	a _p ▶	0.40	1.20	2.00	●										
			120404	RE 0.4	a _p ▶	0.40	1.00	1.60	○										
			120408	RE 0.8	a _p ▶	0.50	1.00	1.50	●										
			120404-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60	○										
			120408-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60	○										
			CN.R02-CBF	RE 0.2	a _p ▶	0.20	0.60	1.00	●										
			CN.R04-CBF	RE 0.4	a _p ▶	0.20	0.60	1.00	●										
			CN.R04-CBG	RE 0.4	a _p ▶	0.40	1.20	2.00	●										
			CN.R08-CBG	RE 0.8	a _p ▶	0.40	1.20	2.00	●										

● stock standard, ○ non-standard stock



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DC	DIAMOND Positive					ISO513	DP (PCD)					PD	DM													
	Size	IC	S	D1	AN		P	ND050	ND100	ND120	ND150			ND190	ND6300	NDM500										
								500	500	500	500			500	1000	1000										
	0702□	6.35	2.38	2.80	7°	M																				
	11T3□	9.525	3.97	4.40	7°	K																				
						N	500	500	500	500	500	1000	1000													
						S	1500	2000	2000	2500	2500	3000	3000													
						H	50					10	30	◀ HARD METAL (Co ≤ 16%)												
GRADE APPLICATION AREA	Stable machining, continuous cut																									
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: orange; margin-right: 5px;"></div> main application </div>	General machining, light interruption																									
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: lightorange; margin-right: 5px;"></div> applicable </div>	Unstable machining, interrupted cut																									
CHIPBREAKER roughing	DCGX 070204-CBG	RE 0.4	$a_p \triangleright$ 0.40	$f_n \triangleright$ 0.10	1.20	2.00		○																		
	DCGX 11T304-CBG	RE 0.4	$a_p \triangleright$ 0.50	$f_n \triangleright$ 0.10	1.50	2.50		●																		
	DCGX 11T308-CBG	RE 0.8	$a_p \triangleright$ 0.50	$f_n \triangleright$ 0.15	1.50	2.50		●																		
FULL EDGE flat tip, picture: right-hand	DCGX 070204 ^R /L-1S	RE 0.4	$a_p \triangleright$ 0.50	$f_n \triangleright$ 0.10	2.00	3.50		●																		
	DCGX 11T304 ^R /L-1S	RE 0.4	$a_p \triangleright$ 0.50	$f_n \triangleright$ 0.10	3.00	5.50		●																		

● stock standard, ○ non-standard stock

HOLDERS EXTERNAL

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HOLDERS INTERNAL

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DN	DIAMOND Negative				ISO513	DP (PCD)					PD	DM													
	Size	IC	S	D1		P	ND050	ND100	ND120	ND150			ND190	ND300	NDM500										
							500	500	500	500			500	1000	1000										
	MICRO DN	7.00	3.18	3.60	P																				
	1506□□	12.70	6.35	5.16	M																				
					K																				
					N	500	500	500	500	500	1000	1000													
					S	1500	2000	2000	2500	2500	3000	3000													
				H	50					10	30	← HARD METAL (Co ≤ 16%)													
GRADE APPLICATION AREA		Stable machining, continuous cut																							
main application		General machining, light interruption			+																				
applicable		Unstable machining, interrupted cut			-																				

SLANT TIP	STANDARD N	DNGM	150604	RE 0.4	a _p ▶	0.40	1.00	1.60										
				LE 2.4	f _n ▶	0.10	0.15	0.20										
tip angle: 7°			150608	RE 0.8	a _p ▶	0.40	1.00	1.60										
				LE 2.0	f _n ▶	0.15	0.20	0.25										
tip angle: 7°	LARGE N	DNGM	150604-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60										
				LE 3.9	f _n ▶	0.10	0.15	0.20										
			150608-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60										
				LE 3.5	f _n ▶	0.15	0.20	0.25										
LARGE N		MICRO	DN.R02-LRG	RE 0.2	a _p ▶	0.40	1.20	2.00										
				LE 3.1	f _n ▶	0.05	0.10	0.15										
				DN.R04-LRG	RE 0.4	a _p ▶	0.40	1.20	2.00									
MICRONEGA			DN.R08-LRG	RE 0.8	a _p ▶	0.40	1.20	2.00										
				LE 2.5	f _n ▶	0.15	0.20	0.25										
FLAT TIP	STANDARD N	DNGA	150604	RE 0.4	a _p ▶	0.40	1.00	1.60										
				LE 2.4	f _n ▶	0.10	0.15	0.20										
				150608	RE 0.8	a _p ▶	0.40	1.00	1.60									
			150608	LE 2.0	f _n ▶	0.15	0.20	0.25										
				LARGE N	DNGA	150604-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60							
			150608-LRG	LE 3.9			f _n ▶	0.10	0.15	0.20								
						150608-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60							
				LE 3.5			f _n ▶	0.15	0.20	0.25								
CHIPBREAKER	CBF N	MICRO	DN.R02-CBF	RE 0.2	a _p ▶	0.20	0.60	1.00										
				LE 3.1	f _n ▶	0.04	0.08	0.12										
			DN.R04-CBF	RE 0.4	a _p ▶	0.20	0.60	1.00										
				LE 2.9	f _n ▶	0.05	0.10	0.15										
MICRONEGA, finishing			DN.R04-CBG	RE 0.4	a _p ▶	0.40	1.20	2.00										
				LE 2.9	f _n ▶	0.10	0.15	0.20										
CBG N		MICRO	DN.R08-CBG	RE 0.8	a _p ▶	0.40	1.20	2.00										
				LE 2.5	f _n ▶	0.15	0.20	0.25										
MICRONEGA, roughing			DN.R08-CBG	RE 0.8	a _p ▶	0.40	1.20	2.00										
				LE 2.5	f _n ▶	0.15	0.20	0.25										

● stock standard, ○ non-standard stock



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TC	DIAMOND Positive					ISO513	DP (PCD)					PD	DM
	Size	IC	S	D1	AN		ND050	ND100	ND120	ND150	ND190		
	0902□	5.56	2.38	2.50	7°	P							
	1102□	6.35	2.38	2.80	7°	M							
	16T3□	9.525	3.97	4.40	7°	K							
						N	500 1500	500 2000	500 2000	500 2500	500 2500	1000 3000	1000 3000
						S	50 100						
						H				10 30			
<p>GRADE APPLICATION AREA</p> <p>Stable machining, continuous cut</p> <p>General machining, light interruption</p> <p>Unstable machining, interrupted cut</p> <p>Hardness: + (circle), - (square)</p> <p>Toughness: - (circle), + (square)</p> <p>◀ HARD METAL (Co ≤ 16%)</p>													

SLANT TIP	STANDARD N	TCGT	090202	RE 0.2	a _p ▶	0.40	1.00	1.60	○															
				LE 2.6	f _n ▶	0.05	0.10	0.15																
<p>tip angle: 7°</p>	STANDARD N	TCGT	090204	RE 0.4	a _p ▶	0.40	1.00	1.60	○															
				LE 2.5	f _n ▶	0.10	0.15	0.20																
	<p>tip angle: 7°</p>	STANDARD N	TCGT	110202	RE 0.2	a _p ▶	0.40	1.00	1.60	○														
					LE 2.6	f _n ▶	0.05	0.10	0.15															
		<p>tip angle: 7°</p>	STANDARD N	TCGT	110204	RE 0.4	a _p ▶	0.40	1.00	1.60	●													
						LE 2.5	f _n ▶	0.10	0.15	0.20														
<p>tip angle: 7°</p>	STANDARD N	TCGT	110208	RE 0.8	a _p ▶	0.40	1.00	1.60	○															
				LE 2.2	f _n ▶	0.15	0.20	0.25																
<p>tip angle: 7°</p>	LARGE N	TCGT	110204-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60	○															
				LE 4.0	f _n ▶	0.10	0.15	0.20																
	<p>tip angle: 7°</p>	LARGE N	TCGT	110208-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60	○														
					LE 3.7	f _n ▶	0.15	0.20	0.25															
	<p>tip angle: 7°</p>	LARGE N	TCGT	16T304-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60	○														
					LE 4.0	f _n ▶	0.10	0.15	0.20															
<p>tip angle: 7°</p>	LARGE N	TCGT	16T308-LRG	RE 0.8	a _p ▶	0.40	1.50	2.60	○															
				LE 3.7	f _n ▶	0.15	0.20	0.25																
	STANDARD N	TCGW	090202	RE 0.2	a _p ▶	0.40	1.00	1.60	○															
				LE 2.6	f _n ▶	0.05	0.10	0.15																
			STANDARD N	TCGW	090204	RE 0.4	a _p ▶	0.40	1.00	1.60	●													
						LE 2.5	f _n ▶	0.10	0.15	0.20														
			STANDARD N	TCGW	110202	RE 0.2	a _p ▶	0.40	1.00	1.60	○													
						LE 2.6	f _n ▶	0.05	0.10	0.15														
				STANDARD N	TCGW	110204	RE 0.4	a _p ▶	0.40	1.00	1.60	●	●	●										
							LE 2.5	f _n ▶	0.10	0.15	0.20													
		STANDARD N	TCGW	110208	RE 0.8	a _p ▶	0.40	1.00	1.60	●	○	○												
					LE 2.2	f _n ▶	0.15	0.20	0.25															
		LARGE N	TCGW	16T304	RE 0.4	a _p ▶	0.40	1.00	1.60	●	●	●												
					LE 2.5	f _n ▶	0.10	0.15	0.20															
		LARGE N	TCGW	16T308	RE 0.8	a _p ▶	0.40	1.00	1.60	●	●	●												
					LE 2.2	f _n ▶	0.15	0.20	0.25															
<p>finishing</p>		CBF N	TCGX	090202-CBF	RE 0.2	a _p ▶	0.20	0.60	1.00	●	●	●												
					LE 3.6	f _n ▶	0.04	0.08	0.12															
	<p>finishing</p>	CBF N	TCGX	090204-CBF	RE 0.4	a _p ▶	0.20	0.60	1.00	●	●	●												
					LE 3.5	f _n ▶	0.05	0.10	0.15															
	<p>finishing</p>	CBF N	TCGX	110202-CBF	RE 0.2	a _p ▶	0.20	0.60	1.00	●	●	●												
					LE 4.1	f _n ▶	0.04	0.08	0.12															
<p>finishing</p>	CBF N	TCGX	110204-CBF	RE 0.4	a _p ▶	0.20	0.60	1.00	●	●	●													
				LE 4.0	f _n ▶	0.05	0.10	0.15																
<p>finishing</p>	CBF N	TCGX	16T304-CBF	RE 0.4	a _p ▶	0.20	0.60	1.00	●	●	●													
				LE 4.0	f _n ▶	0.05	0.10	0.15																

● stock standard, ○ non-standard stock



TC	DIAMOND Positive					ISO513	DP (PCD)					PD	DM													
	Size	IC	S	D1	AN		P	ND050	ND100	ND120	ND150			ND190	ND6300	NDM500										
								500	500	500	500			500	1000	1000										
<p>1 edge</p>	0902□	5.56	2.38	2.50	7°	P																				
	1102□	6.35	2.38	2.80	7°	M																				
	16T3□	9.525	3.97	4.40	7°	K																				
						N	500	500	500	500	500	1000	1000													
						S	1500	2000	2000	2500	2500	3000	3000													
					H	50					10	30	← HARD METAL (Co ≤ 16%)													
GRADE APPLICATION AREA	Stable machining, continuous cut																									
main application	General machining, light interruption																									
applicable	Unstable machining, interrupted cut																									
CHIPBREAKER roughing	CBG N	 RE LE IC AN D1 S 60°	TCGX 090204-CBG	RE 0.4 LE 3.5	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.15	2.50 0.20																			
			TCGX 110204-CBG	RE 0.4 LE 4.0	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.15	2.50 0.20																			
			TCGX 110208-CBG	RE 0.8 LE 3.7	a _p ▶ 0.50 f _n ▶ 0.15	1.50 0.20	2.50 0.25																			
			TCGX 16T304-CBG	RE 0.4 LE 4.0	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.15	2.50 0.20																			
			TCGX 16T308-CBG	RE 0.8 LE 3.7	a _p ▶ 0.50 f _n ▶ 0.15	1.50 0.20	2.50 0.25																			
			FULL EDGE flat tip	1S N	 RE LE IC AN D1 S 60°	TCGX 090204-1S	RE 0.4 LE 9.6	a _p ▶ 0.50 f _n ▶ 0.10	1.50 0.15	2.50 0.20																
TCGX 110204-1S	RE 0.4 LE 11.0	a _p ▶ 0.50 f _n ▶ 0.10				2.00 0.15	3.50 0.20																			
TCGX 16T304-1S	RE 0.4 LE 16.5	a _p ▶ 0.50 f _n ▶ 0.10				3.00 0.15	5.50 0.20																			

● stock standard, ○ non-standard stock



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TN	DIAMOND Negative					ISO513	DP (PCD)					PD	DM
	Size	IC	S	D1	AN		ND050	ND100	ND120	ND150	ND190		
<p>1 edge</p>	1604□□	9.525	4.76	3.81		P							
						M							
						K							
						N	500	500	500	500	500	1000	1000
						S	1500	2000	2000	2500	2500	3000	3000
					H	50							
						100				10	30	◀ HARD METAL (Co ≤ 16%)	
GRADE APPLICATION AREA	Stable machining, continuous cut					+							
main application	General machining, light interruption					-							
applicable	Unstable machining, interrupted cut					+							

SLANT TIP	STANDARD N	TNGM	160404	RE 0.4	a _p ▶	0.40	1.00	1.60	●										
				LE 2.5	f _n ▶	0.10	0.15	0.20											
			160408	RE 0.8	a _p ▶	0.40	1.00	1.60	●										
			160408	LE 2.0	f _n ▶	0.15	0.20	0.25											
	LARGE N	TNGM	160404-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60	○										
			160408-LRG <th>RE 0.8</th> <th>a_p ▶</th> <th>0.40</th> <th>1.50</th> <th>2.60</th> <td>○</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶	0.40	1.50	2.60	○										
			160408-LRG <th>LE 3.7</th> <th>f_n ▶</th> <th>0.15</th> <th>0.20</th> <th>0.25</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	LE 3.7	f _n ▶	0.15	0.20	0.25											
	STANDARD N	TNGA	160404	RE 0.4	a _p ▶	0.40	1.00	1.60	○										
			160408 <th>RE 0.8</th> <th>a_p ▶</th> <th>0.40</th> <th>1.00</th> <th>1.60</th> <td>○</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶	0.40	1.00	1.60	○										
			160408 <th>LE 2.0</th> <th>f_n ▶</th> <th>0.15</th> <th>0.20</th> <th>0.25</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	LE 2.0	f _n ▶	0.15	0.20	0.25											
	LARGE N	TNGA	160404-LRG	RE 0.4	a _p ▶	0.40	1.50	2.60	○										
			160408-LRG <th>RE 0.8</th> <th>a_p ▶</th> <th>0.40</th> <th>1.50</th> <th>2.60</th> <td>○</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	RE 0.8	a _p ▶	0.40	1.50	2.60	○										
			160408-LRG <th>LE 3.7</th> <th>f_n ▶</th> <th>0.15</th> <th>0.20</th> <th>0.25</th> <td>○</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	LE 3.7	f _n ▶	0.15	0.20	0.25	○										

● stock standard, ○ non-standard stock



TP	DIAMOND Positive					ISO513	DP (PCD)					PD	DM															
	Size	IC	S	D1	AN		P	M	K	N	S			H	ND050	ND100	ND120	ND150	ND190	ND6300	NDM500							
	0802□□	4.76	2.38	2.30	11°	P																						
	0902□□	5.56	2.38	3.00	11°	M																						
	1103□□	6.35	3.18	3.30	11°	K																						
							N	500	500	500	500	500	1000	1000														
						S	1500	2000	2000	2500	2500	3000	3000															
						H	50									10	30											
GRADE APPLICATION AREA	Stable machining, continuous cut																											
main application	General machining, light interruption																											
applicable	Unstable machining, interrupted cut																											

SLANT TIP	STANDARD	TPGT	Size	RE	a _p	f _n	v _c	V _{max}	Application		Stock																			
									Stock	Application	Stock	Application																		
 tip angle: 7°		TPGT	080202	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
		TPGT	090202	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
		TPGT	110302	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
	STANDARD	TPGW	080202	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
		TPGW	090202	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
		TPGW	110302	RE 0.2	a _p ▶ 0.40	f _n ▶ 0.05	1.00	1.60																						
				LE 2.6	f _n ▶ 0.10	0.10	0.15																							
 finishing	CBF	TPGX	090202-CBF	RE 0.2	a _p ▶ 0.20	f _n ▶ 0.05	0.60	1.00																						
				LE 3.2	f _n ▶ 0.10	0.10	0.15																							
		TPGX	090204-CBF	RE 0.4	a _p ▶ 0.20	f _n ▶ 0.10	0.60	1.00																						
				LE 3.1	f _n ▶ 0.10	0.15	0.20																							
		TPGX	110302-CBF	RE 0.2	a _p ▶ 0.20	f _n ▶ 0.05	0.60	1.00																						
				LE 4.1	f _n ▶ 0.10	0.10	0.15																							
 roughing	CBG	TPGX	090204-CBG	RE 0.4	a _p ▶ 0.40	f _n ▶ 0.10	1.20	2.00																						
				LE 3.1	f _n ▶ 0.10	0.15	0.20																							
 roughing	CBG	TPGX	110304-CBG	RE 0.4	a _p ▶ 0.50	f _n ▶ 0.10	1.50	2.50																						
				LE 4.0	f _n ▶ 0.10	0.15	0.20																							

● stock standard, ○ non-standard stock

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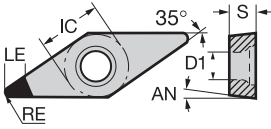
ACCESSORIES







VB	DIAMOND Positive					ISO513	DP (PCD)					PD	DM	
	Size	IC	S	D1	AN		ND050	ND100	ND120	ND150	ND190			ND6300
						P								
	1103□□	6.35	3.18	2.80	5°	M								
	1604□□	9.525	4.76	4.40	5°	K								
						N	500 1500	500 2000	500 2000	500 2500	500 2500	1000 3000	1000 3000	
						S	50 100							
						H				10 30			◀ HARD METAL (Co ≤ 16%)	
GRADE APPLICATION AREA	Stable machining, continuous cut					+								
main application	General machining, light interruption					-								
applicable	Unstable machining, interrupted cut					+								

SLANT TIP	STANDARD N	VBGT	110302	RE 0.2	a_p ▶	0.40	1.00	1.60	●	●	○	○	○	○
				LE 3.0	f_n ▶	0.05	0.10	0.15						
	110304	VBGT	110304	RE 0.4	a_p ▶	0.40	1.00	1.60		●				
				LE 2.5	f_n ▶	0.10	0.15	0.20		●				
	160408	VBGT	160404	RE 0.4	a_p ▶	0.40	1.00	1.60	●	●	●	○	○	
				LE 2.5	f_n ▶	0.10	0.15	0.20						
160408	VBGT	160408	RE 0.8	a_p ▶	0.40	1.00	1.60	●	●	●	○	○		
			LE 2.2	f_n ▶	0.15	0.20	0.25							
LARGE N	160404-LRG	VBGT	160404-LRG	RE 0.4	a_p ▶	0.40	1.50	2.60		●				
				LE 4.5	f_n ▶	0.10	0.15	0.20						
	160408-LRG	VBGT	160408-LRG	RE 0.8	a_p ▶	0.40	1.50	2.60		●				
				LE 3.7	f_n ▶	0.15	0.20	0.25						
FLAT TIP	STANDARD N	VBGW	110302	RE 0.2	a_p ▶	0.40	1.00	1.60	●	●	○			
				LE 3.0	f_n ▶	0.05	0.10	0.15						
	110304	VBGW	110304	RE 0.4	a_p ▶	0.40	1.00	1.60	○	●	○			
				LE 2.5	f_n ▶	0.10	0.15	0.20						
160408	VBGW	160404	RE 0.4	a_p ▶	0.40	1.00	1.60	○	●	○	○	○	○	
			LE 2.5	f_n ▶	0.10	0.15	0.20							
160408	VBGW	160408	RE 0.8	a_p ▶	0.40	1.00	1.60	○	○	○	○	○	○	
			LE 2.2	f_n ▶	0.15	0.20	0.25							
CHIPBREAKER	CBF N	VBGX	110302-CBF	RE 0.2	a_p ▶	0.20	0.60	1.00			●			
				LE 5.0	f_n ▶	0.04	0.08	0.12						
				RE 0.4	a_p ▶	0.20	0.60	1.00			●			
	110304-CBF	VBGX	160404-CBF	RE 0.4	a_p ▶	0.20	0.60	1.00			●			
				LE 4.5	f_n ▶	0.05	0.10	0.15						
				RE 0.4	a_p ▶	0.20	0.60	1.00			●			
160404-CBF	VBGX	110304-CBG	RE 0.4	a_p ▶	0.50	1.50	2.50			●				
			LE 4.5	f_n ▶	0.10	0.15	0.20							
			RE 0.4	a_p ▶	0.50	1.50	2.50			●				
160404-CBG	VBGX	160404-CBG	RE 0.4	a_p ▶	0.50	1.50	2.50			●				
			LE 4.5	f_n ▶	0.10	0.15	0.20							
			RE 0.8	a_p ▶	0.50	1.50	2.50			●				
160408-CBG	VBGX	160408-CBG	RE 0.8	a_p ▶	0.50	1.50	2.50			●				
			LE 3.7	f_n ▶	0.15	0.20	0.25							

● stock standard, ○ non-standard stock



VC		DIAMOND Positive					ISO513	DP (PCD)						PD	DM								
								ND050	ND100	ND120	ND150	ND190	ND6300	NDM500									
		Size	IC	S	D1	AN	P																
		1103□□	6.35	3.18	2.80	7°	M																
		1604□□	9.525	4.76	4.40	7°	K																
								N	500	500	500	500	500	1000	1000								
								S	1500	2000	2000	2500	2500	3000	3000								
							H						10	30	◀ HARD METAL (Co ≤ 16%)								
GRADE APPLICATION AREA		Stable machining, continuous cut					+																
■ main application		General machining, light interruption					-																
■ applicable		Unstable machining, interrupted cut					+																

SLANT TIP	STANDARD N	VCGT	110302		110304		160402		160404		160408															
			RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00
tip angle: 7°			LE 3.0		0.05		0.10		0.15		0.20															
			LE 2.5		0.10		0.15		0.20		0.25															
LARGE N	VCGT	160404-LRG		160408-LRG																						
		RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60
tip angle: 7°			LE 4.5		0.10		0.15		0.20		0.25															
			LE 3.7		0.15		0.20		0.25		0.30															
FLAT TIP	STANDARD N	VCGW	110302		110304		160404		160408																	
			RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00	1.60	RE	a_p	f_n	1.00
tip angle: 7°			LE 3.0		0.05		0.10		0.15		0.20															
			LE 2.5		0.10		0.15		0.20		0.25															
LARGE N	VCGW	110304-LRG		160404-LRG		160408-LRG		160412-LRG																		
		RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60	RE	a_p	f_n	1.50	2.60
tip angle: 7°			LE 4.5		0.10		0.15		0.20		0.25															
			LE 3.3		0.20		0.25		0.30																	
CHIPBREAKER	CBF N	VCGX	110302-CBF		110304-CBF		160404-CBF																			
			RE	a_p	f_n	0.60	1.00	RE	a_p	f_n	0.60	1.00	RE	a_p	f_n	0.60	1.00	RE	a_p	f_n	0.60	1.00	RE	a_p	f_n	0.60
finishing			LE 5.0		0.04		0.08		0.12		0.15															
			LE 4.5		0.05		0.10		0.15		0.20															
roughing	CBG N	VCGX	110304-CBG		160404-CBG		160408-CBG																			
			RE	a_p	f_n	1.50	2.50	RE	a_p	f_n	1.50	2.50	RE	a_p	f_n	1.50	2.50	RE	a_p	f_n	1.50	2.50	RE	a_p	f_n	1.50
tip angle: 7°			LE 4.5		0.10		0.15		0.20		0.25															
			LE 3.7		0.15		0.20		0.25		0.30															

● stock standard, ○ non-standard stock

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VC	DIAMOND Positive					ISO513	DP (PCD)					PD	DM													
	Size	IC	S	D1	AN		P	ND050	ND100	ND120	ND150			ND190	ND6300	NDM500										
	1103□□	6.35	3.18	2.80	7°		M																			
1604□□	9.525	4.76	4.40	7°	K																					
<p>1 edge</p>						N	500	500	500	500	500	1000	1000													
						S	1500	2000	2000	2500	2500	3000	3000													
						H	50																			
						H	100				10	30		← HARD METAL (Co ≤ 16%)												
GRADE APPLICATION AREA	Stable machining, continuous cut					+																				
■ main application	General machining, light interruption					-																				
■ applicable	Unstable machining, interrupted cut					+																				
FULL EDGE	<p>flat tip, picture: right-hand</p>	VCGX	110304*/L-1S	RE 0.4 LE 11.2	a _p ▶ 0.50 f _n ▶ 0.10	2.00 0.15	3.50 0.20	●																		
		VCGX	160404*/L-1S	RE 0.4 LE 16.6	a _p ▶ 0.50 f _n ▶ 0.10	3.00 0.15	5.50 0.20	●																		

● stock standard

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WN		DIAMOND Negative				ISO513	DP (PCD)					PD	DM									
							ND050	ND100	ND120	ND150	ND190	ND6300	NDM500									
<p>1 edge</p>	Size	IC	S	D1		P																
	0804□□	12.70	4.76	5.16		M																
						K																
						N	500	500	500	500	500	1000	1000	<div style="background-color: #90EE90; width: 100%; height: 10px;"></div>								
						S	1500	2000	2000	2500	2500	3000	3000	<div style="background-color: #D2B48C; width: 100%; height: 10px;"></div>								
						H	50							<div style="background-color: #A08060; width: 100%; height: 10px;"></div>								
						H	100							<div style="background-color: #A08060; width: 100%; height: 10px;"></div>								
						H					10			<div style="background-color: #A08060; width: 100%; height: 10px;"></div>								
						H					30			<div style="background-color: #A08060; width: 100%; height: 10px;"></div>								
						H								<div style="background-color: #A08060; width: 100%; height: 10px;"></div>								
GRADE APPLICATION AREA		Stable machining, continuous cut																				
<div style="width: 10px; height: 10px; background-color: orange; display: inline-block;"></div> main application		General machining, light interruption				+																
<div style="width: 10px; height: 10px; background-color: lightorange; display: inline-block;"></div> applicable		Unstable machining, interrupted cut				-																
SLANT TIP	STANDARD N	<p>tip angle: 7°</p>	WNGM 080404		RE 0.4	a_p	0.40	1.00	1.60													
				LE 2.8	f_n	0.10	0.15	0.20														
		080408	RE 0.8	a_p	0.40	1.00	1.60															
			LE 2.7	f_n	0.15	0.20	0.25															
	LARGE N	<p>tip angle: 7°</p>	WNGM 080404-LRG		RE 0.4	a_p	0.40	1.50	2.60													
				LE 4.3	f_n	0.10	0.15	0.20														
	080408-LRG	RE 0.8	a_p	0.40	1.50	2.60																
		LE 4.2	f_n	0.15	0.20	0.25																
FLAT TIP	STANDARD N		WNGA 080404		RE 0.4	a_p	0.40	1.00	1.60													
				LE 2.8	f_n	0.10	0.15	0.20														
		080408	RE 0.8	a_p	0.40	1.00	1.60															
			LE 2.7	f_n	0.15	0.20	0.25															
LARGE N		WNGA 080404-LRG		RE 0.4	a_p	0.40	1.50	2.60														
			LE 4.3	f_n	0.10	0.15	0.20															
	080408-LRG	RE 0.8	a_p	0.40	1.50	2.60																
		LE 4.2	f_n	0.15	0.20	0.25																

● stock standard, ○ non-standard stock

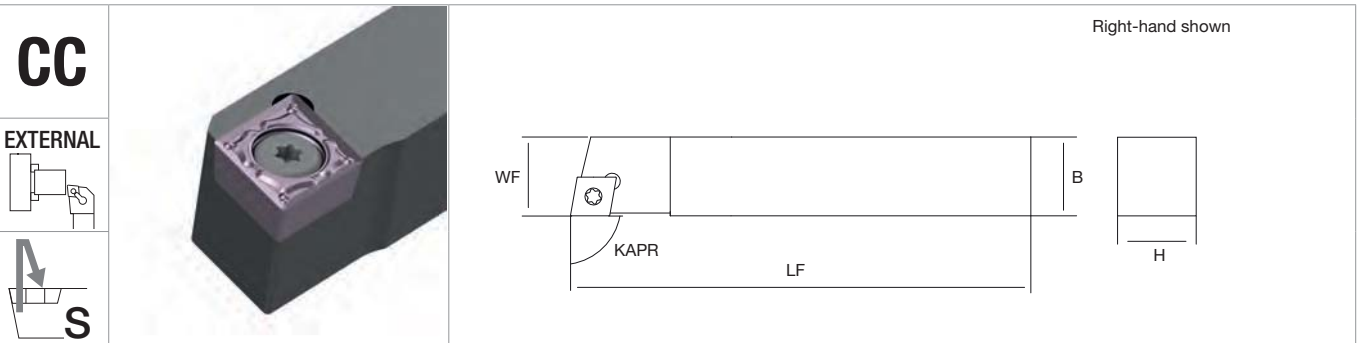
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TURNING Holders

TURNING



THREADING

SCAC External turning (KAPR 90°)		R	L	H	B	WF	LF	KG	MIID		

06	NT-SCAC%/0808K06	○	○	8	8	8	125		CC□□0602		
	NT-SCAC%/1010K06	●	●	10	10	10	125				
	NT-SCAC%/1212K06	●	●	12	12	12	125				
09	NT-SCAC%/1212K09	●	●	12	12	12	125		CC□□09T3		
	NT-SCAC%/1616K09	●	●	16	16	16	125				

● stock standard, ○ non-standard stock

GROOVING



NT-SCAC%/0808K06	NT-ST010	NT-FT07
NT-SCAC%/1010K06		
NT-SCAC%/1212K06		
NT-SCAC%/1212K09	NT-ST030	NT-FT15
NT-SCAC%/1616K09		

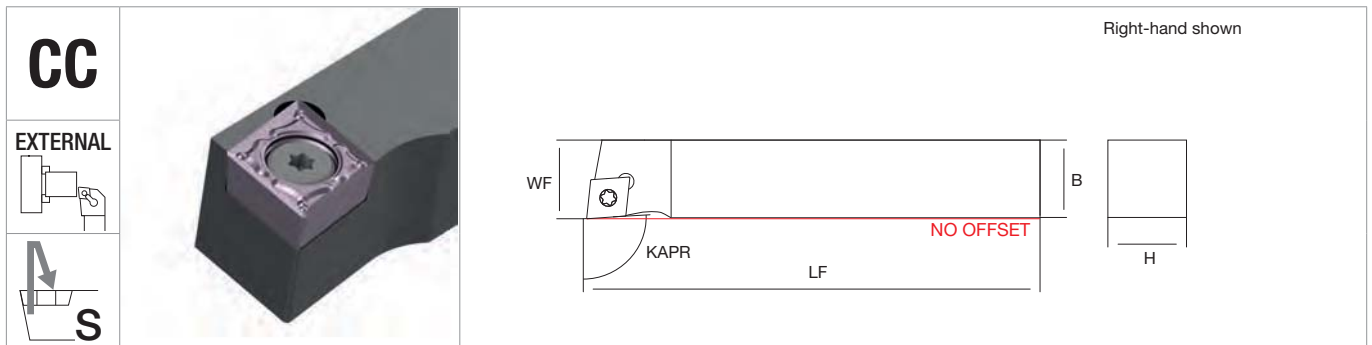
MILLING



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DRILLING

ACCESSORIES



CC EXTERNAL  		SCLC N External turning (KAPR 95°)		H	B	WF	LF	KG	MIID		
				R	L						

06	NT-SCLC%/L0808K06N	○	○	8	8	8	125		CC□□0602		
	NT-SCLC%/L1010K06N	●	●	10	10	10	125				
09	NT-SCLC%/L1212K09N	●	●	12	12	12	125		CC□□09T3		
	NT-SCLC%/L1616K09N	●	●	16	16	16	125				

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-SCLC%/L0808K06N	NT-ST010	NT-FT07
NT-SCLC%/L1010K06N		
NT-SCLC%/L1212K09N	NT-ST030	NT-FT15
NT-SCLC%/L1616K09N		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

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TURNING

THREADING

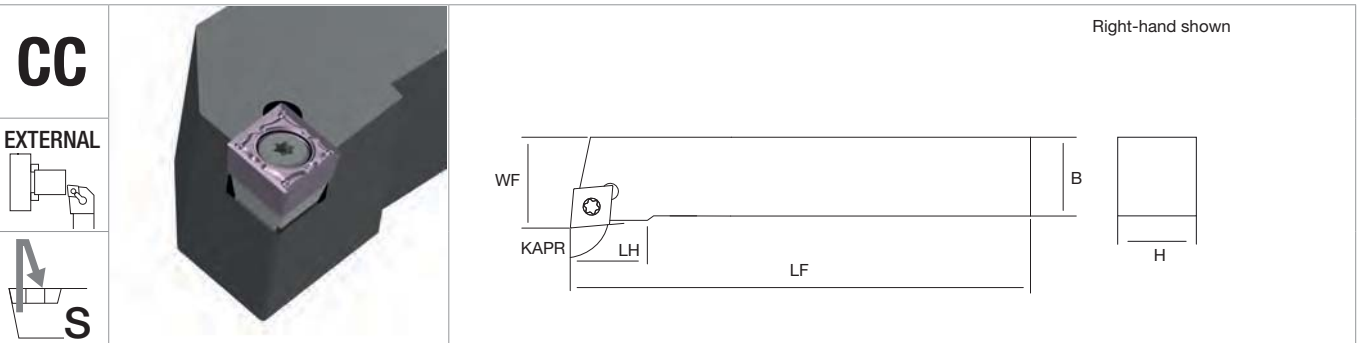
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



CC

EXTERNAL



SCLC

External turning (KAPR 95°)

R L

H	B	WF	LF	LH	KG	MIID
---	---	----	----	----	----	------

09	NT-SCLC [®] /2020K09S	●	●	20	20	25	125	22		CC□□09T3
	NT-SCLC [®] /2525M09S	●	●	25	25	32	150	25		
12	NT-SCLC [®] /2020K12S	●	●	20	20	25	125	22		CC□□1204
	NT-SCLC [®] /2525M12S	●	●	25	25	32	150	25		

● stock standard

GROOVING

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SCLC [®] /2020K09S	NT-SH011	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SCLC [®] /2525M09S	NT-SH011	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SCLC [®] /2020K12S	NT-SH001	NT-SR001	NT-WR040	NT-ST007	NT-FT15
NT-SCLC [®] /2525M12S	NT-SH001	NT-SR001	NT-WR040	NT-ST007	NT-FT15

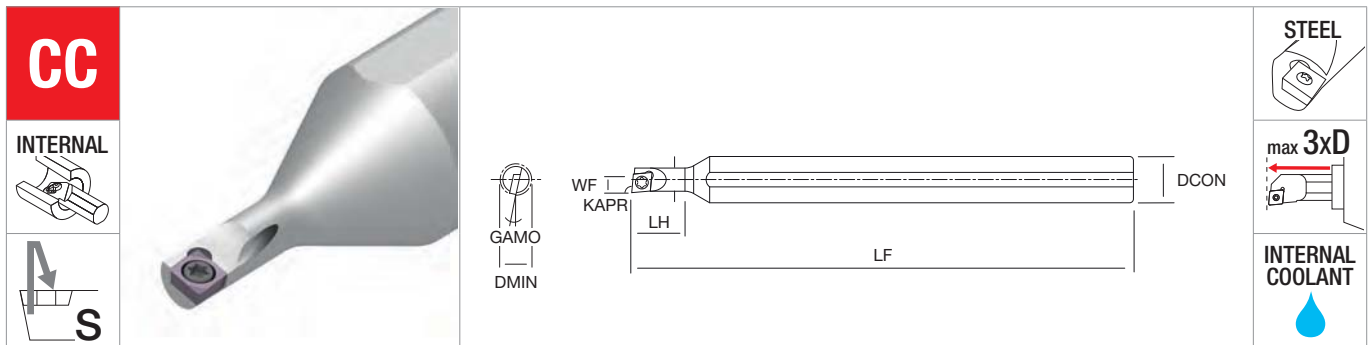
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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CC	INTERNAL	A MICRO Internal turning (KAPR 95°)	R	DMIN	DCON	WF	LF	LH	GAMO	KG	MIID
	S			STEEL	INTERNAL COOLANT						

MICRO	NT-A12H-MICRO-CC-RH	●	5	12	2.5	100	8	15°		MICRO CC
	NT-A16H-MICRO-CC-RH	●	5	16	2.5	100	12	15°		

● stock standard



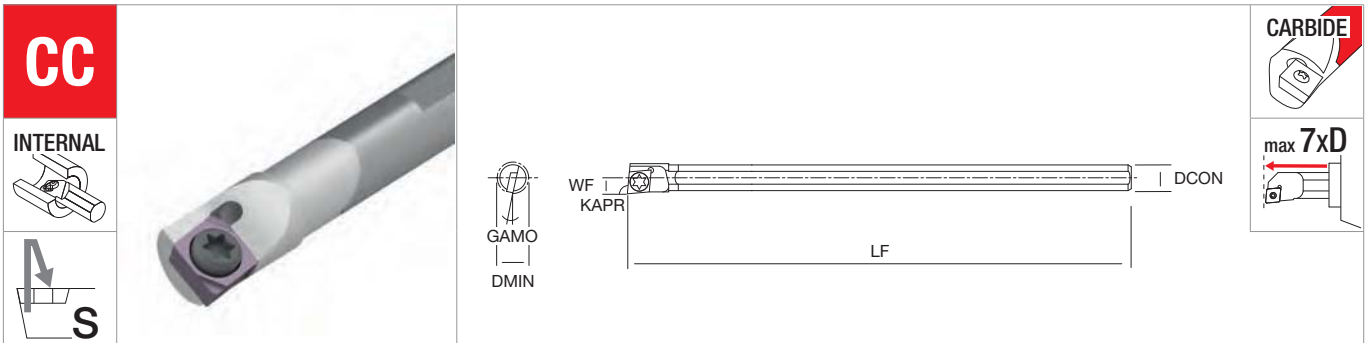
NT-A12H-MICRO-CC-RH	NT-ST002	NT-FT06
NT-A16H-MICRO-CC-RH		



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TURNING
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C MICRO Internal turning (KAPR 95°)		DMIN	DCON	WF	LF	GAMO	KG	MIID	
	R								
MICRO	NT-C04G-MICRO-CC-RH	●	5	4	2.5	90	15°		
	NT-C05H-MICRO-CC-RH	●	6	5	3	100	13°		MICRO CC

● stock standard

GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH
NT-C04G-MICRO-CC-RH	NT-ST002	NT-FT06
NT-C05H-MICRO-CC-RH		

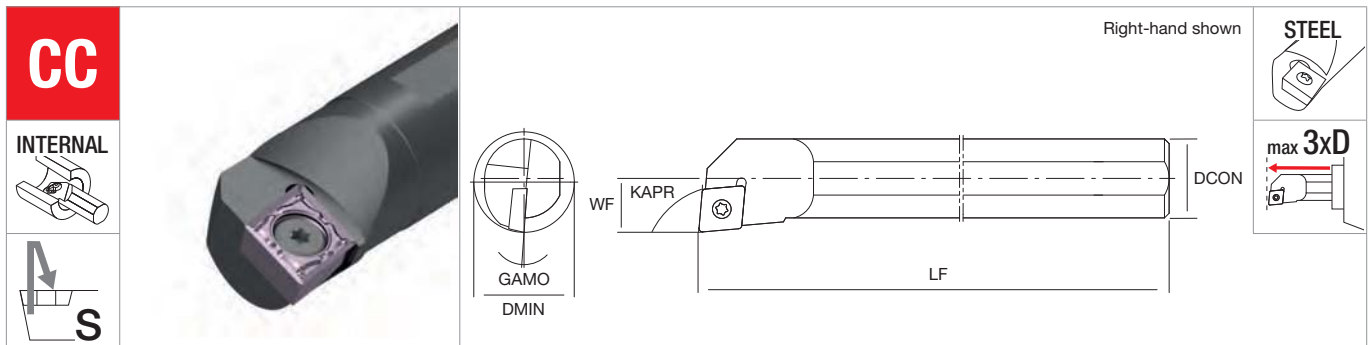
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
MICRO CC	page 8	page 39	-	page 70

DRILLING

ACCESSORIES





S SCLC Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

06	NT-S08H-SCLC%/06	●	●	10	8	5	100	13°	CC□0602	
	NT-S10K-SCLC%/06	●	●	12	10	6	125	12°		
	NT-S12M-SCLC%/06	●	●	14	12	7	150	9°		
	NT-S16Q-SCLC%/06	●	●	18	16	9	180	7°		
09	NT-S12M-SCLC%/09	●	●	14	12	7	150	13°	CC□09T3	
	NT-S16Q-SCLC%/09	●	●	18	16	9	180	9°		
	NT-S20R-SCLC%/09	●	●	22	20	11	200	5°		
12	NT-S20R-SCLC%/12	●	●	25	20	13	200	8°	CC□1204	
	NT-S25R-SCLC%/12	●	●	32	25	17	200	8°		
	NT-S32S-SCLC%/12S	●	●	40	32	22	250	6°	CC□1204	
	NT-S40T-SCLC%/12S	●	●	50	40	27	300	4°		

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-S08H-SCLC%/06				NT-ST006	
NT-S10K-SCLC%/06	-	-	-	NT-ST010	NT-FT07
NT-S12M-SCLC%/06					
NT-S16Q-SCLC%/06					
NT-S12M-SCLC%/09				NT-ST025	NT-FT15
NT-S16Q-SCLC%/09	-	-	-	NT-ST030	
NT-S20R-SCLC%/09					
NT-S20R-SCLC%/12				NT-ST050	NT-FT15
NT-S25R-SCLC%/12					
NT-S32S-SCLC%/12S	NT-SH001	NT-SR001	NT-WR040	NT-ST007	NT-FT15
NT-S40T-SCLC%/12S					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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TURNING

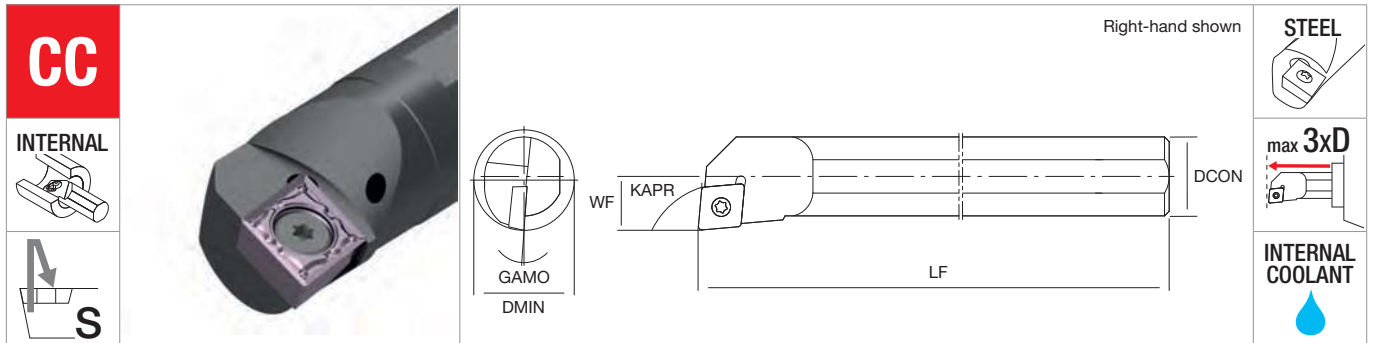
THREADING

GROOVING

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ACCESSORIES



CC		INTERNAL		DMIN	DCON	WF	LF	GAMO	KG	MIID	STEEL	INTERNAL COOLANT
		A SCLC										
		Internal turning (KAPR 95°)										
		R	L									

				DMIN	DCON	WF	LF	GAMO	KG	MIID	
06	NT-A08H-SCLC%/06	●	●	10	8	5	100	13°		CC□0602	
	NT-A10K-SCLC%/06	●	●	12	10	6	125	12°			
	NT-A12M-SCLC%/06	●	●	14	12	7	150	9°			
	NT-A16Q-SCLC%/06	●	●	18	16	9	180	7°			
09	NT-A12M-SCLC%/09	●	●	14	12	7	150	13°		CC□09T3	
	NT-A16Q-SCLC%/09	●	●	18	16	9	180	9°			
	NT-A20R-SCLC%/09	●	●	22	20	11	200	5°			

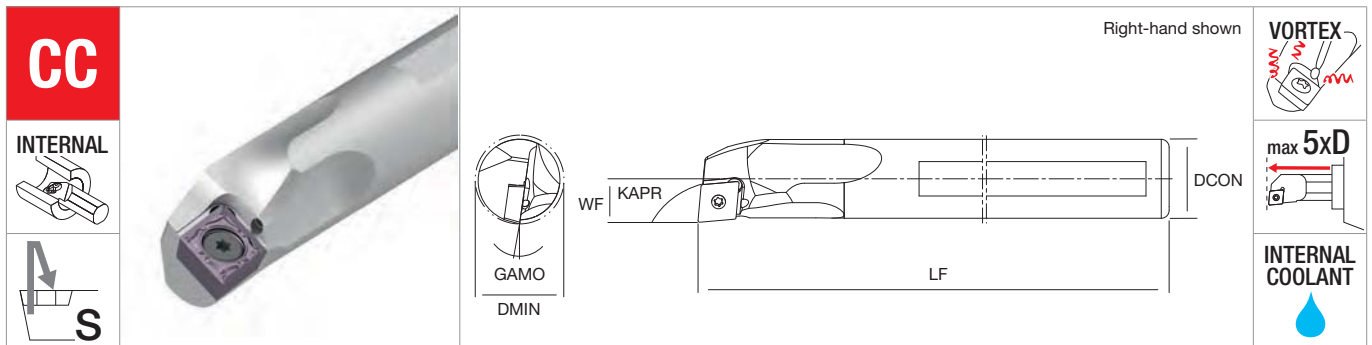
● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-A08H-SCLC%/06	NT-ST006	NT-FT07
NT-A10K-SCLC%/06	NT-ST010	
NT-A12M-SCLC%/06		
NT-A16Q-SCLC%/06		
NT-A12M-SCLC%/09	NT-ST025	NT-FT15
NT-A16Q-SCLC%/09	NT-ST030	
NT-A20R-SCLC%/09		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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V SCLC Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID
06	NT-V08H-SCLC%/06-10	●	●	10	8	5	100	14°		CC□0602
	NT-V10K-SCLC%/06-12	●	●	12	10	6	125	12°		
	NT-V12M-SCLC%/06-14	●	●	14	12	7	150	10°		
09	NT-V12M-SCLC%/09-14	●	●	14	12	7	150	12°		CC□09T3
	NT-V16Q-SCLC%/09-18	●	●	18	16	9	180	10°		
	NT-V20R-SCLC%/09-22	●	●	22	20	11	200	8°		
	NT-V25S-SCLC%/09-27	●	●	27	25	13.5	250	6°		
12	NT-V20R-SCLC%/12-25	●	●	25	20	13	200	7°		CC□1204
	NT-V25S-SCLC%/12-32	●	●	32	25	17	250	5°		

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-V08H-SCLC%/06-10	NT-ST006	NT-FT07
NT-V10K-SCLC%/06-12	NT-ST010	
NT-V12M-SCLC%/06-14		
NT-V12M-SCLC%/09-14	NT-ST025	NT-FT15
NT-V16Q-SCLC%/09-18	NT-ST030	
NT-V20R-SCLC%/09-22		
NT-V25S-SCLC%/09-27		
NT-V20R-SCLC%/12-25	NT-ST050	NT-FT15
NT-V25S-SCLC%/12-32		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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CC□1204	page 8	-	page 56	page 70

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THREADING

GROOVING

MILLING

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TURNING

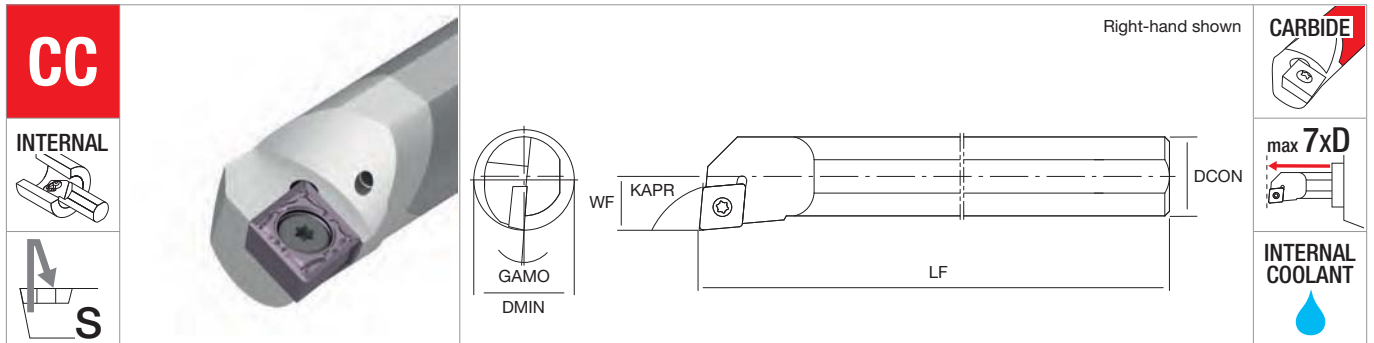
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



E SCLC Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

06	NT-E08K-SCLC%/06	●	●	10	8	5	125	9°	CC□0602
	NT-E10K-SCLC%/06	●	●	12	10	6	125	7°	
	NT-E12M-SCLC%/06	●	●	14	12	7	150	6°	
09	NT-E12M-SCLC%/09	●	●	14	12	7	150	6°	CC□09T3
	NT-E16R-SCLC%/09	●	●	18	16	9	200	7°	
	NT-E20R-SCLC%/09	●	●	22	20	11	200	5°	

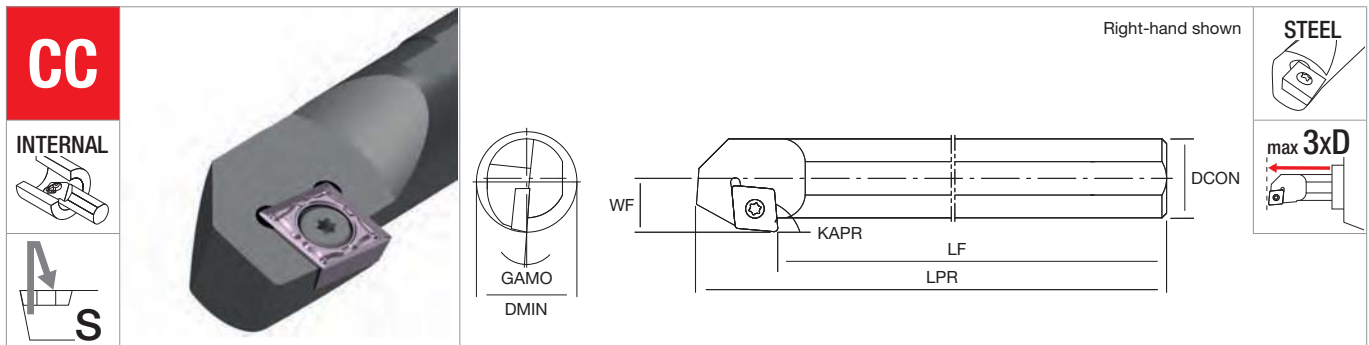
● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-E08K-SCLC%/06	NT-ST006	NT-FT07
NT-E10K-SCLC%/06	NT-ST010	
NT-E12M-SCLC%/06		
NT-E12M-SCLC%/09	NT-ST025	NT-FT15
NT-E16R-SCLC%/09	NT-ST030	
NT-E20R-SCLC%/09		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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S SCZC Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	LPR	GAMO	KG	MIID

06	NT-S08H-SCZC%/06	●	●	12	8	6.5	100	110	13°	CC□0602
	NT-S10K-SCZC%/06	●	●	14	10	7.5	125	135	12°	
	NT-S12M-SCZC%/06	●	●	16	12	8.5	150	160	10°	
09	NT-S16Q-SCZC%/09	●	●	21	16	11.5	180	196	10°	CC□09T3
	NT-S20R-SCZC%/09	●	●	25	20	13.5	200	218	8°	
	NT-S25R-SCZC%/09	●	●	32	25	16	200	218	8°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S08H-SCZC%/06	NT-ST006	NT-FT07
NT-S10K-SCZC%/06	NT-ST010	
NT-S12M-SCZC%/06		
NT-S16Q-SCZC%/09	NT-ST030	NT-FT15
NT-S20R-SCZC%/09		
NT-S25R-SCZC%/09		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
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TURNING

THREADING

GROOVING

MILLING


DRILLING

ACCESSORIES


TURNING


CN

EXTERNAL

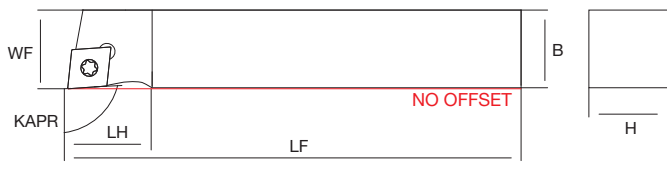


MICRONEGA





Right-hand shown



THREADING

MICRO CN			H	B	WF	LF	LH		MIID	
External Turning (KAPR 95°)	R	L								

MICRO	NT-EX10H-MICRO-CN ^{RH/LH}	●	●	10	10	10	100	15	MICRO CN	
	NT-EX12H-MICRO-CN ^{RH/LH}	●	●	12	12	12	100	15		
	NT-EX16K-MICRO-CN ^{RH/LH}	●	●	16	16	16	120	15		
	NT-EX20K-MICRO-CN ^{RH/LH}	●	●	20	20	20	120	15		
	NT-EX25M-MICRO-CN ^{RH/LH}	●	●	25	25	25	150	15		


● stock standard

GROOVING

Spare Parts	INSERT SCREW 	INSERT WRENCH 
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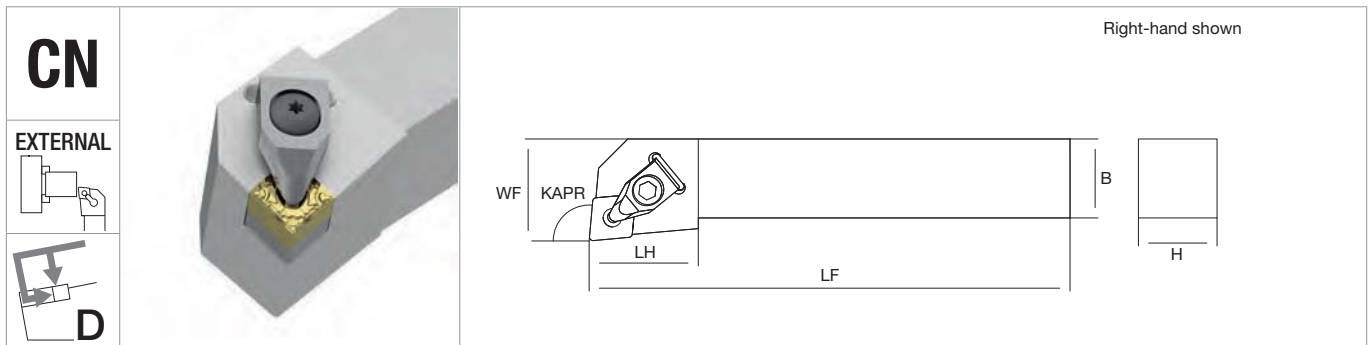
NT-EX10H-MICRO-CN ^{RH/LH}	NT-ST400	NT-FT10
NT-EX12H-MICRO-CN ^{RH/LH}		
NT-EX16K-MICRO-CN ^{RH/LH}		
NT-EX20K-MICRO-CN ^{RH/LH}		
NT-EX25M-MICRO-CN ^{RH/LH}		

MILLING

Inserts	CARBIDE 	PCBN 	CERAMIC 	DIAMOND 
MICRO CN	page 10	page 40	-	page 72

DRILLING

ACCESSORIES



CN	EXTERNAL					Right-hand shown					MIID

DCLN External Turning (KAPR 95°)		R	L	H	B	WF	LF	LH		MIID
09	NT-DCLN [®] /L1616H09X	●	●	16	16	20	100	33		CN□□0903
	NT-DCLN [®] /L2020K09X	●	●	20	20	25	125	30		
	NT-DCLN [®] /L2525M09X	●	●	25	25	32	150	30		
12	NT-DCLN [®] /L2020K12X	●	●	20	20	25	125	40		CN□□1204
	NT-DCLN [®] /L2525M12X	●	●	25	25	32	150	36		
	NT-DCLN [®] /L3225P12X	●	●	32	25	32	170	36		

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	CLAMP	SPRING	CLAMP SCREW	CLAMP WRENCH
NT-DCLN [®] /L1616H09X	NT-SH012	NT-ST031	NT-WR020	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DCLN [®] /L2020K09X							
NT-DCLN [®] /L2525M09X							
NT-DCLN [®] /L2020K12X	NT-SH030	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-DCLN [®] /L2525M12X							
NT-DCLN [®] /L3225P12X							

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
CN□□0903	page 10	-	-	-
CN□□1204	page 10	page 40	page 57	page 72

TURNING

THREADING

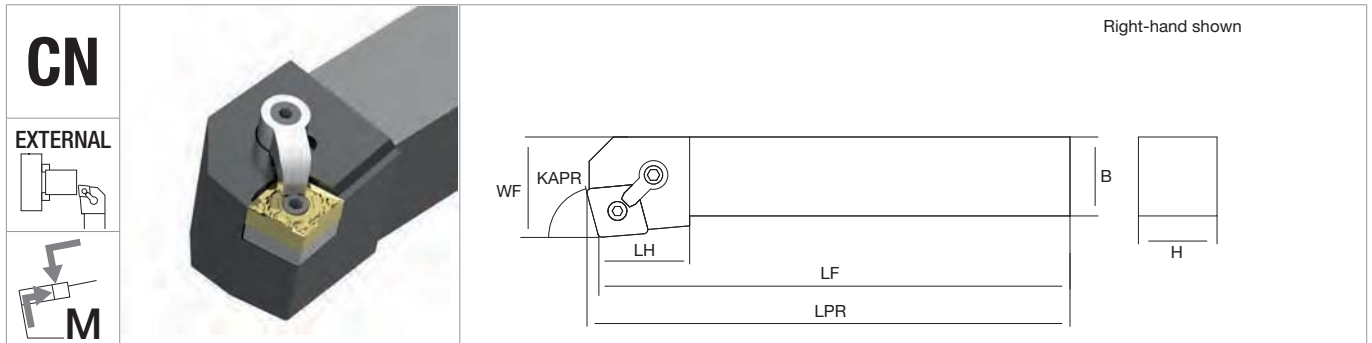
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

		MCKN External turning (KAPR 75°)		H	B	WF	LF	LH	LPR	KG	MIID
		R	L								
12	NT-MCKN®/L2020K12	●	●	20	20	25	122	37	125		CN□□1204
	NT-MCKN®/L2525M12	●	●	25	25	32	147	34	150		
	NT-MCKN®/L3232P12	●	●	32	32	40	167	40	170		
16	NT-MCKN®/L3232P16	○	○	32	32	40	167	40	170		CN□□1606

● stock standard, ○ non-standard stock

GROOVING



NT-MCKN®/L2020K12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCKN®/L2525M12					
NT-MCKN®/L3232P12					
NT-MCKN®/L3232P16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

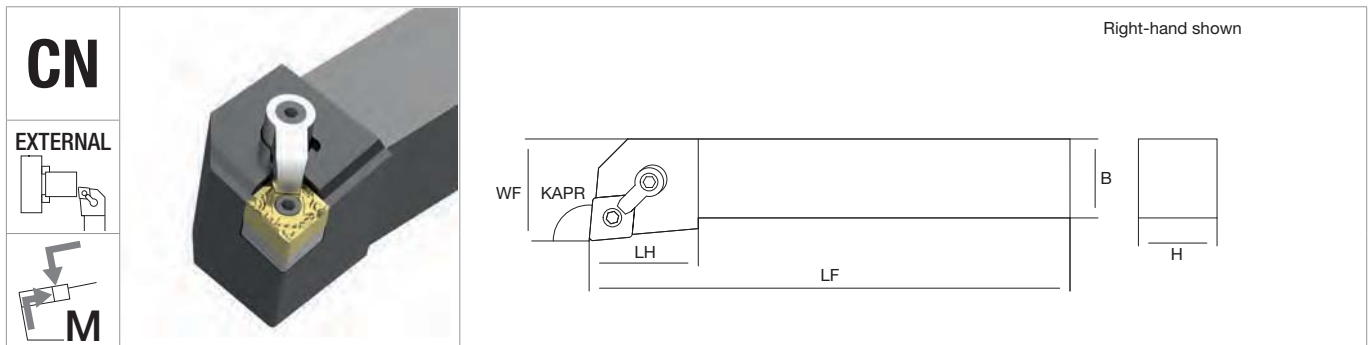
MILLING



CN□□1204	page 10	page 40	page 57	page 72
CN□□1606	page 10	-	page 57	-

DRILLING

ACCESSORIES



CN	EXTERNAL					Right-hand shown						MIID	

MCLN		External turning (KAPR 95°)		H	B	WF	LF	LH		MIID	
		R	L								
12	NT-MCLN [®] /L2020K12	●	●	20	20	25	125	33		CN□1204	
	NT-MCLN [®] /L2525M12	●	●	25	25	32	150	33			
	NT-MCLN [®] /L3232P12	●	●	32	32	40	170	33			
16	NT-MCLN [®] /L2525M16	●	●	25	25	32	150	33		CN□1606	
	NT-MCLN [®] /L3232P16	●	●	32	32	40	170	33			
19	NT-MCLN [®] /L3232P19	○	○	32	32	40	170	38		CN□1906	
	NT-MCLN [®] /L4040S19	○	○	40	40	50	250	38			

● stock standard, ○ non-standard stock

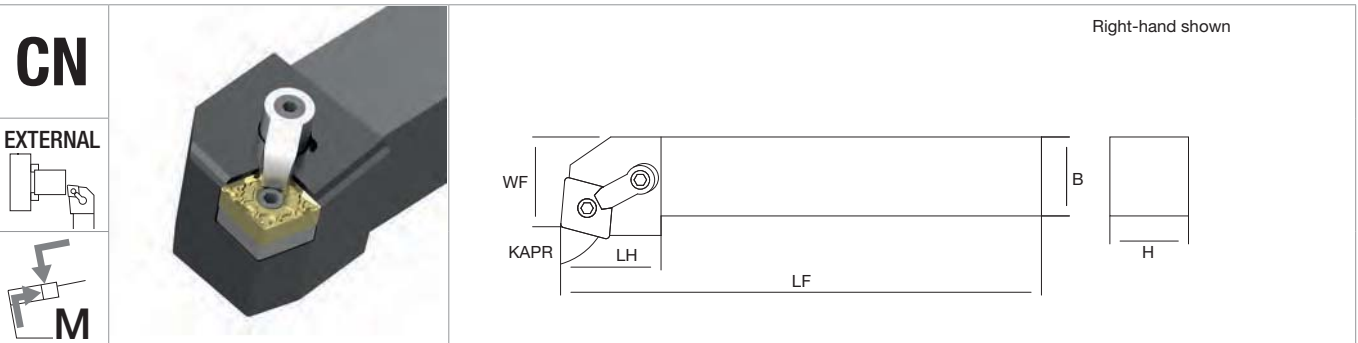


NT-MCLN [®] /L2020K12	NT-MCLN [®] /L2525M12	NT-MCLN [®] /L3232P12	NT-MCLN [®] /L2525M16	NT-MCLN [®] /L3232P16	NT-MCLN [®] /L3232P19	NT-MCLN [®] /L4040S19
	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030	
	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030	
	NT-SH080	NT-SP050	NT-CS015	NT-SC070	NT-WR040	



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CN□1606	page 10	-	page 57	-
CN□1906	page 11	-	-	-

TURNING



THREADING

CN			Right-hand shown						
EXTERNAL									
M									
MCRN			H	B	WF	LF	LH	KG	MIID
External turning (KAPR 75°)									
	R	L							

12	NT-MCRN®/L2020K12	● ●	20	20	22	125	37		CN□1204
	NT-MCRN®/L2525M12	● ●	25	25	27	150	34		
	NT-MCRN®/L3232P12	● ●	32	32	35	170	40		
16	NT-MCRN®/L3232P16	○ ○	32	32	35	170	40		CN□1606

● stock standard, ○ non-standard stock

GROOVING



NT-MCRN®/L2020K12					
NT-MCRN®/L2525M12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCRN®/L3232P12					
NT-MCRN®/L3232P16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

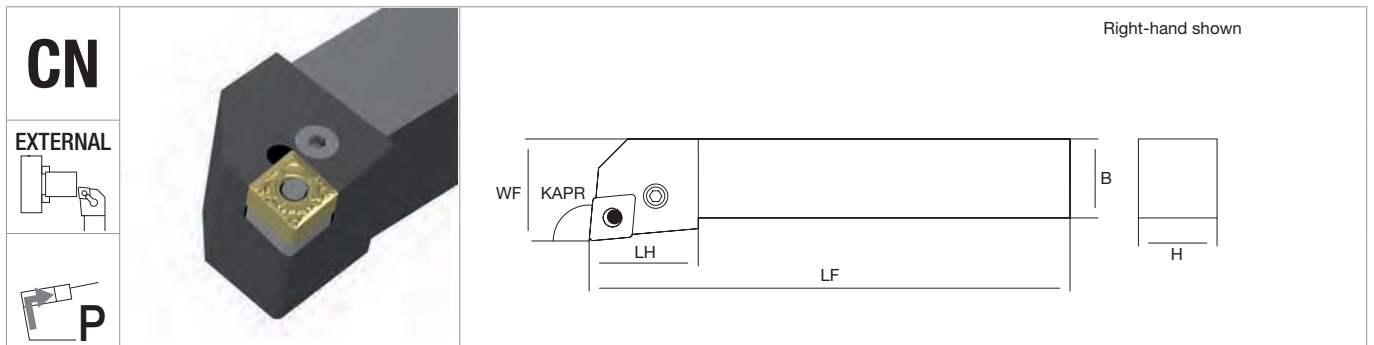
MILLING



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CN□1606	page 10	-	page 57	-

DRILLING

ACCESSORIES



PCLN External turning (KAPR 95°)		R	L	H	B	WF	LF	LH		MIID		

09	NT-PCLN [®] /L1616H09	●	●	16	16	20	100	20		CN□□0903	
	NT-PCLN [®] /L2020K09	●	●	20	20	25	125	20			
	NT-PCLN [®] /L2525M09	●	●	25	25	32	150	23			
12	NT-PCLN [®] /L2020K12	●	●	20	20	25	125	26		CN□□1204	
	NT-PCLN [®] /L2525M12	●	●	25	25	32	150	26			

● stock standard

Spare Parts	SHIM	PLUG	LEVER	LEVER SCREW	WRENCH

NT-PCLN [®] /L1616H09	NT-SH012	NT-SR012	NT-LL012	NT-SC015	NT-WR025
NT-PCLN [®] /L2020K09					
NT-PCLN [®] /L2525M09					
NT-PCLN [®] /L2020K12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-PCLN [®] /L2525M12					


Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

CN□□0903	page 10	-	-	-
CN□□1204	page 10	page 40	page 57	page 72


TURNING


CN


INTERNAL

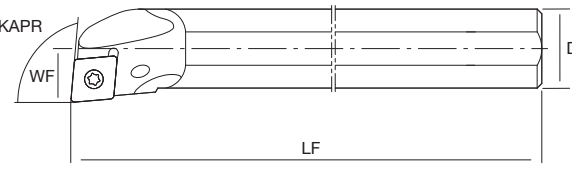


MICRONEGA











Right-hand shown


STEEL



max **3xD**



INTERNAL COOLANT



THREADING

A MICRO CN		DMIN	DCON	WF	LF	GAMO		MIID	
Internal turning (KAPR 95°)									
	R L								

MICRO			DMIN	DCON	WF	LF	GAMO		MICRO CN
	●	●							
	●	●	10	8	5.5	125	21°		
	●	●	12	10	6	125	21°		
	●	●	14	12	7	150	19°		
	●	●	20	16	10	200	16°		
	●	●	24	20	12.5	200	16°		

● stock standard

GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-A08K-MICRO-CN ^{RH/LH}	NT-ST400	NT-FT10
NT-A10K-MICRO-CN ^{RH/LH}		
NT-A12M-MICRO-CN ^{RH/LH}		
NT-A16R-MICRO-CN ^{RH/LH}		
NT-A20R-MICRO-CN ^{RH/LH}		

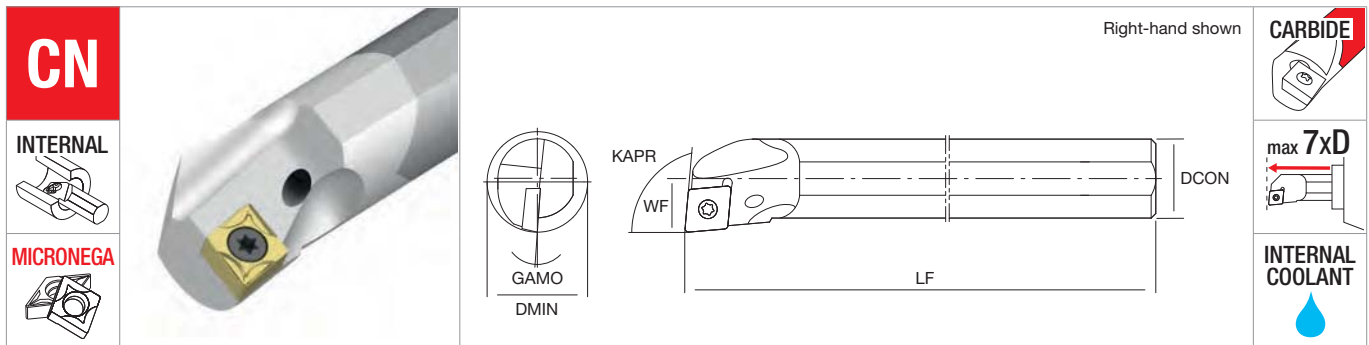
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

MICRO CN	page 10	page 40	-	page 72
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DRILLING

ACCESSORIES



E MICRO CN Internal turning (KAPR 95°)		DMIN	DCON	WF	LF	GAMO	KG	MIID
	R L							

MICRO	NT-E08K-MICRO-CN ^{RH/LH}	● ●	10	8	5.5	125	21°	MICRO CN
	NT-E10K-MICRO-CN ^{RH/LH}	○ ●	12	10	6	125	21°	
	NT-E12M-MICRO-CN ^{RH/LH}	● ●	14	12	7	150	19°	
	NT-E16R-MICRO-CN ^{RH/LH}	● ●	20	16	10	200	16°	
	NT-E20R-MICRO-CN ^{RH/LH}	● ●	24	20	12.5	200	16°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-E08K-MICRO-CN ^{RH/LH}	NT-ST400	NT-FT10
NT-E10K-MICRO-CN ^{RH/LH}		
NT-E12M-MICRO-CN ^{RH/LH}		
NT-E16R-MICRO-CN ^{RH/LH}		
NT-E20R-MICRO-CN ^{RH/LH}		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

MICRO CN	page 10	page 40	-	page 72
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TURNING

THREADING

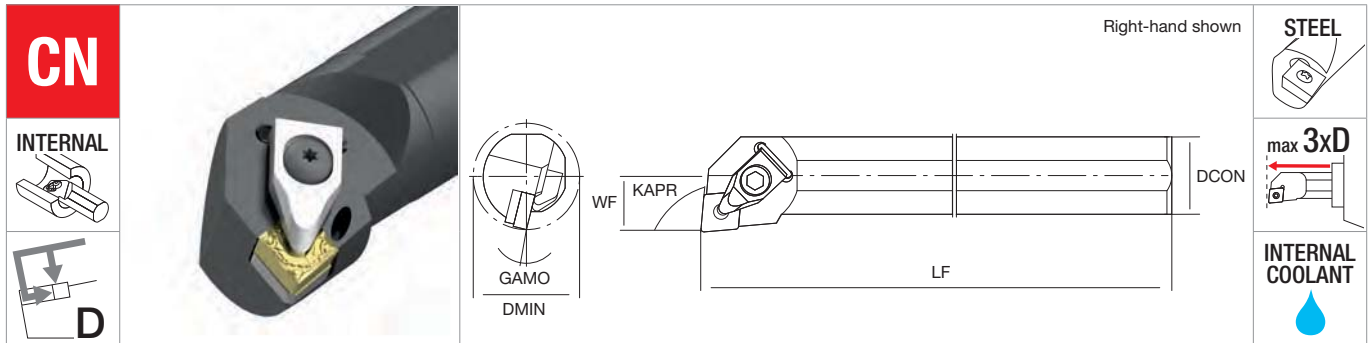
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

A DCLN Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID
		●	●	32	25	17	200	14°		
12	NT-A25R-DCLN [®] /L12	●	●	32	25	17	200	14°		
	NT-A32S-DCLN [®] /L12	●	●	40	32	22	250	14°		CN□1204
	NT-A40T-DCLN [®] /L12	●	●	50	40	27	300	12°		

● stock standard

GROOVING

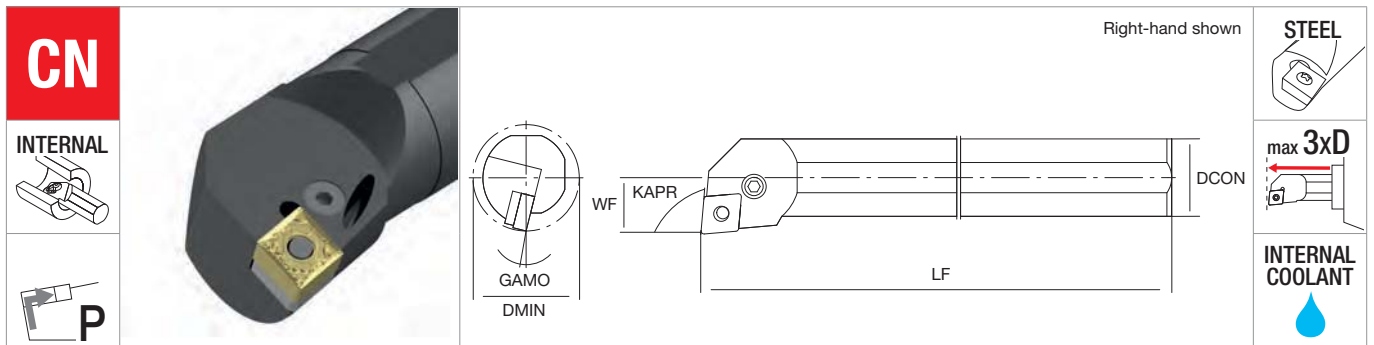
Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	CLAMP	SPRING	CLAMP SCREW	CLAMP WRENCH
NT-A25R-DCLN [®] /L12	NT-SH035	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-A32S-DCLN [®] /L12							
NT-A40T-DCLN [®] /L12							

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
CN□1204	page 10	page 40	page 57	page 72

DRILLING

ACCESSORIES



A PCLN Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

12	NT-A25R-PCLN [®] /L12	●	●	32	25	17	200	11°		CN□1204
	NT-A32S-PCLN [®] /L12	●	●	40	32	22	250	11°		
	NT-A40T-PCLN [®] /L12	●	●	50	40	27	300	10°		

● stock standard

Spare Parts	SHIM	PLUG	LEVER	LEVER SCREW	WRENCH

NT-A25R-PCLN [®] /L12	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PCLN [®] /L12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PCLN [®] /L12					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

CN□1204	page 10	page 40	page 57	page 72
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TURNING

THREADING

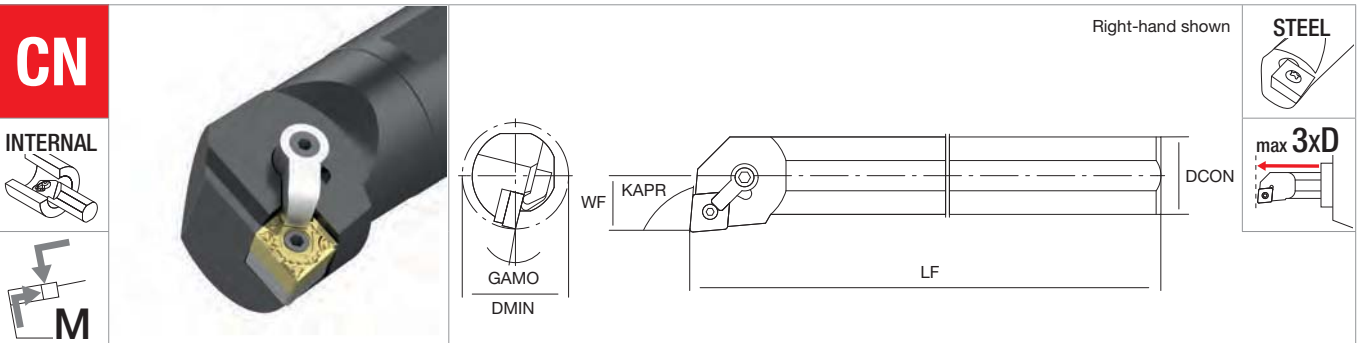
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



CN	INTERNAL		S MCLN Internal turning (KAPR 95°)	DMIN	DCON	WF	LF	GAMO	KG	MIID
	R	L								

12	NT-S20R-MCLN [®] /L12	●	●	25	20	13	200	17°	CN□1204	
	NT-S25R-MCLN [®] /L12	●	●	32	25	17	200	14°		
	NT-S32S-MCLN [®] /L12	●	●	40	32	22	250	14°		
	NT-S40T-MCLN [®] /L12	●	●	50	40	27	300	12°		
	NT-S50U-MCLN [®] /L12	●	●	63	50	35	350	12°		
16	NT-S40T-MCLN [®] /L16	●	●	50	40	27	300	11°	CN□1606	
	NT-S50U-MCLN [®] /L16	●	●	63	50	35	350	12°		
19	NT-S50U-MCLN [®] /L19	●	●	63	50	35	350	12°	CN□1906	

● stock standard, ○ non-standard stock

THREADING

GROOVING



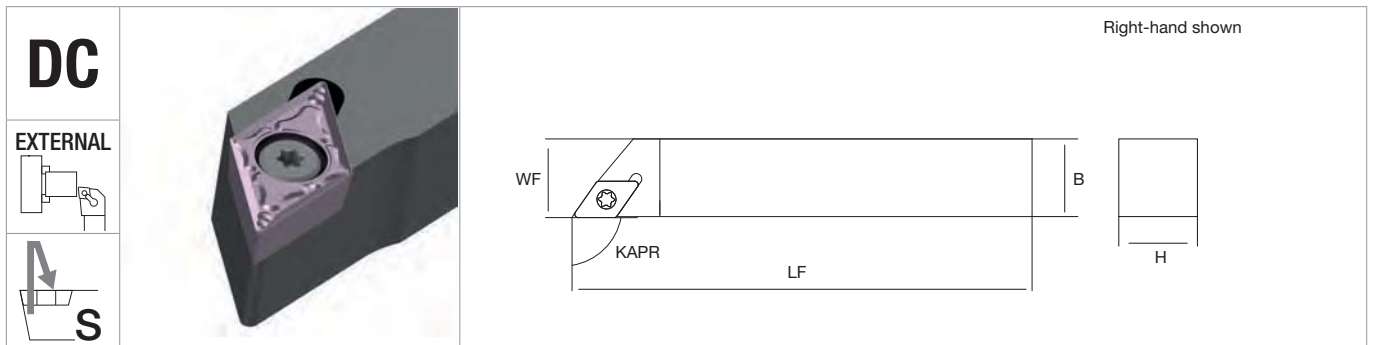
NT-S20R-MCLN [®] /L12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MCLN [®] /L12				NT-SC008		
NT-S32S-MCLN [®] /L12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MCLN [®] /L12						
NT-S50U-MCLN [®] /L12						
NT-S40T-MCLN [®] /L16	NT-SH055	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN [®] /L16						
NT-S50U-MCLN [®] /L19	NT-SH080	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
CN□1204	page 10	page 40	page 57	page 72
CN□1606	page 10	-	page 57	-
CN□1906	page 11	-	-	-

DRILLING

ACCESSORIES



DC	EXTERNAL			Right-hand shown							

SDAC External turning (KAPR 90°)				H	B	WF	LF		MIID		
	R	L									
07	NT-SDAC%/0808K07	○	○	8	8	8	125		DC□□0702		
	NT-SDAC%/1010K07	●	●	10	10	10	125				
	NT-SDAC%/1212K07	●	●	12	12	12	125				
11	NT-SDAC%/1212K11	●	●	12	12	12	125		DC□□11T3		
	NT-SDAC%/1616K11	●	●	16	16	16	125				

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-SDAC%/0808K07	NT-ST010	NT-FT07
NT-SDAC%/1010K07		
NT-SDAC%/1212K07		
NT-SDAC%/1212K11	NT-ST035	NT-FT15
NT-SDAC%/1616K11		


Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

DC□□0702	page 14	page 42	-	page 73
DC□□11T3	page 14	page 42	-	page 73

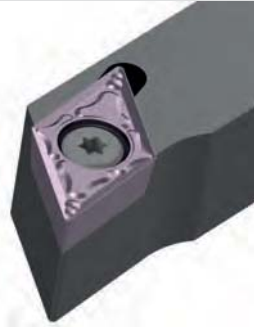
TURNING

DC

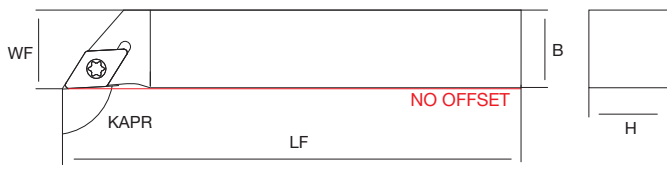
EXTERNAL



S



Right-hand shown



THREADING

SDJC N			H	B	WF	LF		MIID		
External turning (KAPR 93°)										
	R	L								

07	NT-SDJC%/L0808K07N	○	○	8	8	8	125	DC□□0702		
	NT-SDJC%/L1010K07N	●	●	10	10	10	125			
	NT-SDJC%/L1212K07N	●	●	12	12	12	125			
11	NT-SDJC%/L1212K11N	●	●	12	12	12	125	DC□□11T3		
	NT-SDJC%/L1616K11N	●	●	16	16	16	125			

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-SDJC%/L0808K07N	NT-ST010	NT-FT07
NT-SDJC%/L1010K07N		
NT-SDJC%/L1212K07N		
NT-SDJC%/L1212K11N	NT-ST035	NT-FT15
NT-SDJC%/L1616K11N		

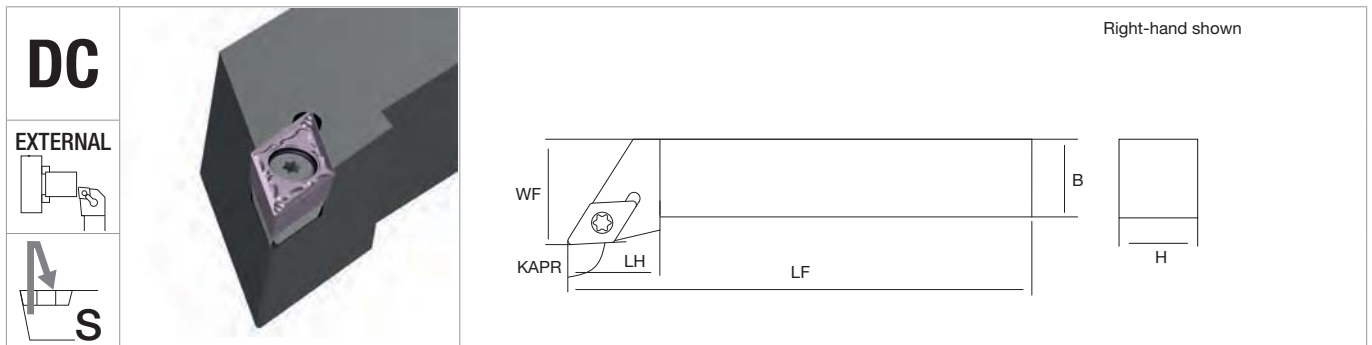
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

DC□□0702	page 14	page 42	-	page 73
DC□□11T3	page 14	page 42	-	page 73

DRILLING

ACCESSORIES



DC	SDJC		H	B	WF	LF	LH	KG	MIID		
	External turning (KAPR 93°)									R	L

				H	B	WF	LF	LH	KG	MIID	
		R	L								
NT	NT-SDJC%/1616H11	●	●	16	16	20	100	18		DC□□11T3	
	NT-SDJC%/2020K11	●	●	20	20	25	125	23			
	NT-SDJC%/2525M11	●	●	25	25	32	150	27			
	NT-SDJC%/2020K11S	●	●	20	20	25	125	22		DC□□11T3	
	NT-SDJC%/2525M11S	●	●	25	25	32	150	25			

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SDJC%/1616H11	-	-	-	NT-ST035	NT-FT15
NT-SDJC%/2020K11					
NT-SDJC%/2525M11					
NT-SDJC%/2020K11S	NT-SH007	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SDJC%/2525M11S					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

DC□□11T3	page 14	page 42	-	page 73
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TURNING

THREADING

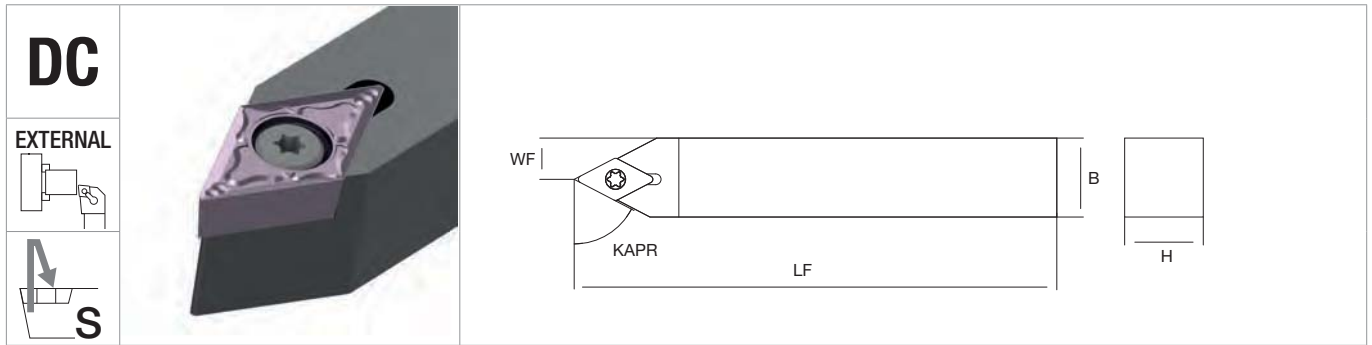
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

SDNCN External turning (KAPR 62.5°)			H	B	WF	LF	KG	MIID		
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GROOVING

07	NT-SDNCN0808H07	○	8	8	4	100		DC□□0702		
	NT-SDNCN1010H07	○	10	10	5	100				
11	NT-SDNCN1212H11	●	12	12	6	100		DC□□11T3		
	NT-SDNCN1616H11	●	16	16	8	100				
	NT-SDNCN2020K11	●	20	20	10	125				
	NT-SDNCN2525M11	●	25	25	12.5	150				
	NT-SDNCN2020K11S	○	20	20	10	125		DC□□11T3		
	NT-SDNCN2525M11S	○	25	25	12.5	150				

● stock standard, ○ non-standard stock

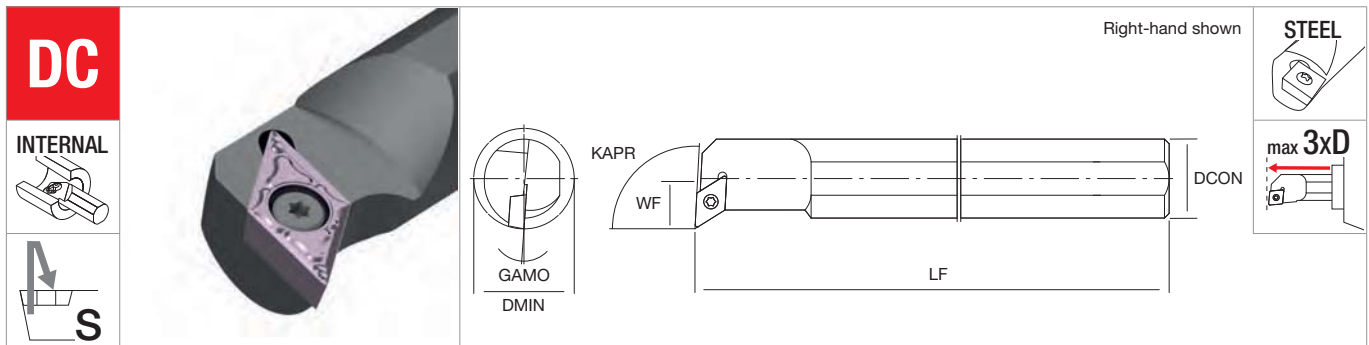
MILLING

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-SDNCN0808H07				NT-ST010	NT-FT07
NT-SDNCN1010H07	-	-	-		
NT-SDNCN1212H11					
NT-SDNCN1616H11	-	-	-	NT-ST035	NT-FT15
NT-SDNCN2020K11					
NT-SDNCN2525M11					
NT-SDNCN2020K11S	NT-SH007	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SDNCN2525M11S					

DRILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
DC□□0702	page 14	page 42	-	page 73
DC□□11T3	page 14	page 42	-	page 73

ACCESSORIES



S SDUC Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

07	NT-S10M-SDUC%/07	●	●	13	10	7	150	10°	DC□□0702
	NT-S12M-SDUC%/07	●	●	16	12	9	150	8°	
	NT-S16Q-SDUC%/07	●	●	20	16	11	180	6°	
	NT-S20R-SDUC%/07	●	●	25	20	13	200	5°	
11	NT-S16Q-SDUC%/11	●	●	20	16	11	180	7°	DC□□11T3
	NT-S20R-SDUC%/11	●	●	25	20	13	200	8°	
	NT-S25R-SDUC%/11	●	●	32	25	17	200	4°	
	NT-S32S-SDUC%/11	●	●	39	32	22	250	4°	
	NT-S40T-SDUC%/11	●	●	50	40	24	300	2°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S10M-SDUC%/07	NT-ST010	NT-FT07
NT-S12M-SDUC%/07		
NT-S16Q-SDUC%/07		
NT-S20R-SDUC%/07		
NT-S16Q-SDUC%/11	NT-ST035	NT-FT15
NT-S20R-SDUC%/11		
NT-S25R-SDUC%/11		
NT-S32S-SDUC%/11		
NT-S40T-SDUC%/11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
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DC□□11T3	page 14	page 42	-	page 73

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

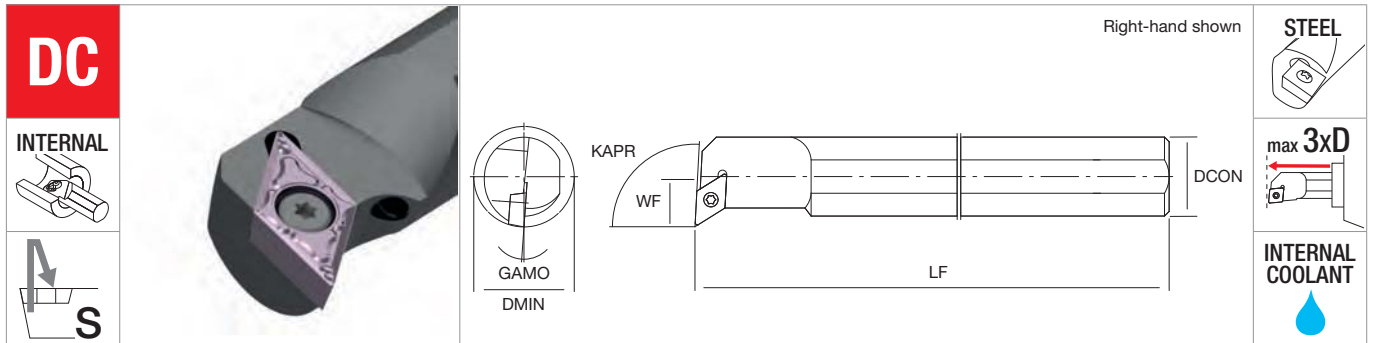
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



DC		INTERNAL		A SDUC Internal turning (KAPR 93°)		DMIN	DCON	WF	LF	GAMO	KG	MIID
						R	L					

07	NT-A10M-SDUC%/07	●	●	13	10	7	150	10°	DC□0702
	NT-A12M-SDUC%/07	●	●	16	12	9	150	8°	
	NT-A16Q-SDUC%/07	●	●	20	16	11	180	6°	
	NT-A20R-SDUC%/07	●	●	25	20	13	200	5°	
11	NT-A16Q-SDUC%/11	●	●	20	16	11	180	7°	DC□11T3
	NT-A20R-SDUC%/11	●	●	25	20	13	200	8°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH


NT-A10M-SDUC%/07	NT-ST010	NT-FT07
NT-A12M-SDUC%/07		
NT-A16Q-SDUC%/07		
NT-A20R-SDUC%/07		
NT-A16Q-SDUC%/11	NT-ST035	NT-FT15
NT-A20R-SDUC%/11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND


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DC□11T3	page 14	page 42	-	page 73

DC

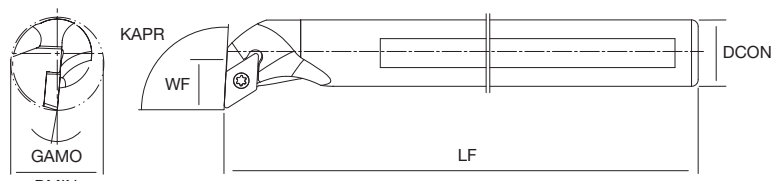
INTERNAL




S



Right-hand shown




VORTEX



max 5xD

INTERNAL COOLANT



		R L		DMIN	DCON	WF	LF	GAMO	KG	MIID	
07	NT-V10K-SDUC%/07-14	●	●	14	10	8.7	125	5°		DC□□0702	
	NT-V12M-SDUC%/07-16	●	●	16	12	9.7	150	5°			
	NT-V16Q-SDUC%/07-20	●	●	20	16	11.7	180	5°			
	NT-V20R-SDUC%/07-25	●	●	25	20	13.7	200	5°			
11	NT-V16Q-SDUC%/11-23	●	●	23	16	14.5	180	5°		DC□□11T3	
	NT-V20R-SDUC%/11-27	●	●	27	20	16.5	200	5°			
	NT-V25S-SDUC%/11-32	●	●	32	25	19	250	5°			

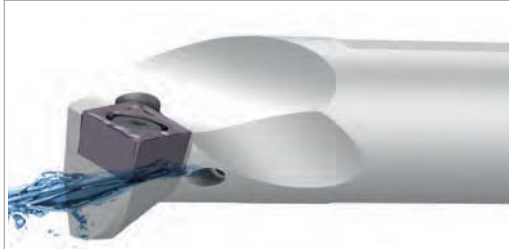
● stock standard


Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-V10K-SDUC%/07-14	NT-ST010	NT-FT07
NT-V12M-SDUC%/07-16		
NT-V16Q-SDUC%/07-20		
NT-V20R-SDUC%/07-25		
NT-V16Q-SDUC%/11-23	NT-ST035	NT-FT15
NT-V20R-SDUC%/11-27		
NT-V25S-SDUC%/11-32		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

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DC□□11T3	page 14	page 42	-	page 73



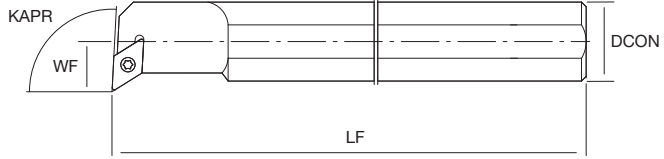


COOLANT HOLE POSITION
Improved chip evacuation thanks to optimized direction of coolant jet

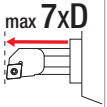
- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

DC



Right-hand shown



E SDUC

Internal turning (KAPR 93°)

R L

DMIN DCON WF LF GAMO **KG** MIID

07	NT-E10K-SDUC%/L07	● ●	13	10	7	125	10°		DC□□0702
	NT-E12M-SDUC%/L07	● ●	16	12	9	150	8°		
11	NT-E16R-SDUC%/L11	● ●	20	16	11	200	7°		DC□□11T3
	NT-E20R-SDUC%/L11	● ●	25	20	13	200	8°		

● stock standard

GROOVING

Spare Parts



NT-E10K-SDUC%/L07	NT-ST010	NT-FT07
NT-E12M-SDUC%/L07		
NT-E16R-SDUC%/L11	NT-ST035	NT-FT15
NT-E20R-SDUC%/L11		

MILLING

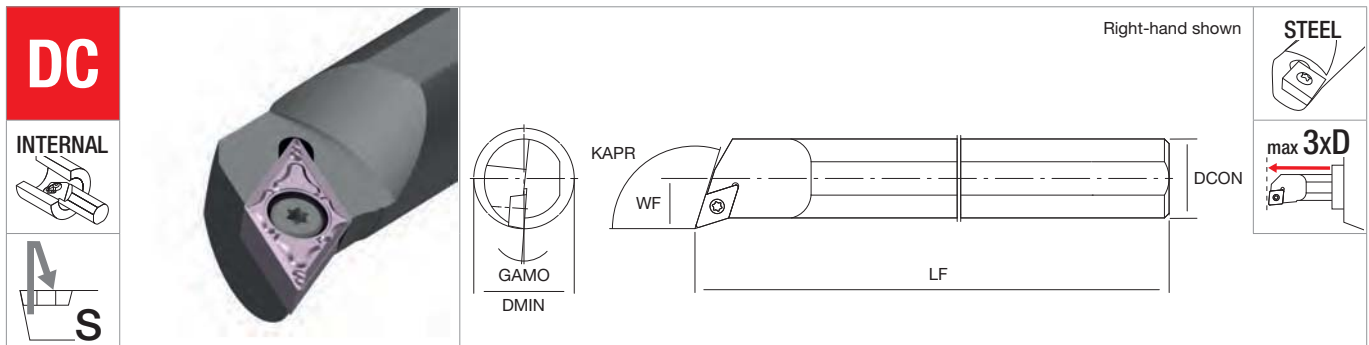
Inserts



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DC□□11T3	page 14	page 42	-	page 73

DRILLING

ACCESSORIES



DC INTERNAL 		S 			DMIN	DCON	WF	LF	GAMO	KG	MIID	
			S SDQC Internal turning (KAPR 107.5°)		R	L						

		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID	
07	NT-S10M-SDQC%/07	●	●	13	10	7	150	10°		DC□□0702	
	NT-S12M-SDQC%/07	●	●	16	12	9	150	8°			
	NT-S16Q-SDQC%/07	●	●	20	16	11	180	6°			
	NT-S20R-SDQC%/07	●	●	25	20	13	200	6°			
11	NT-S16Q-SDQC%/11	●	●	20	16	11	180	6°		DC□□11T3	
	NT-S20R-SDQC%/11	●	●	25	20	13	200	8°			
	NT-S25R-SDQC%/11	●	●	32	25	17	200	4°			
	NT-S32S-SDQC%/11	●	●	38	32	20	250	4°			

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S10M-SDQC%/07	NT-ST010	NT-FT07
NT-S12M-SDQC%/07		
NT-S16Q-SDQC%/07		
NT-S20R-SDQC%/07		
NT-S16Q-SDQC%/11	NT-ST035	NT-FT15
NT-S20R-SDQC%/11		
NT-S25R-SDQC%/11		
NT-S32S-SDQC%/11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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DC□□11T3	page 14	page 42	-	page 73

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

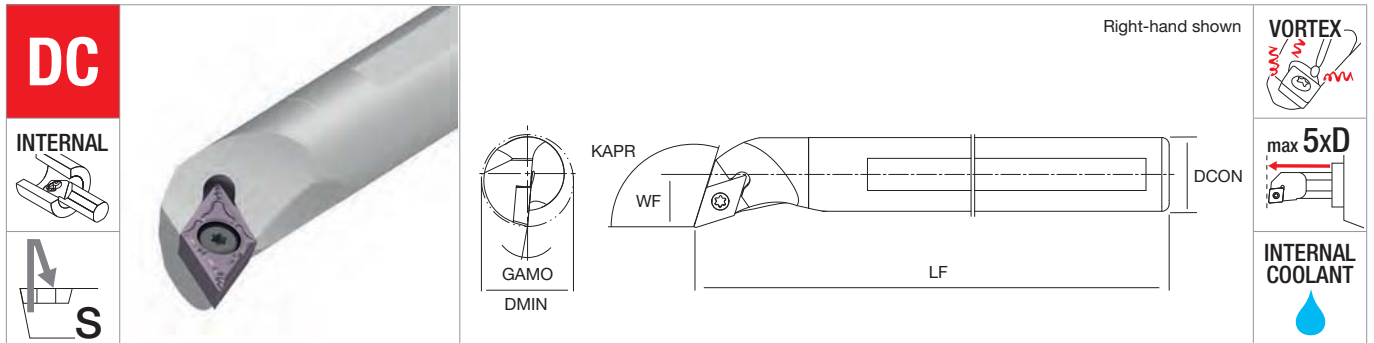
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



V SDQC Internal turning (KAPR 107.5°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

07	NT-V10K-SDQC%/07-13	●	●	13	10	7.7	125	10°	DC□0702
	NT-V12M-SDQC%/07-16	●	●	16	12	9.7	150	8°	
	NT-V16Q-SDQC%/07-20	●	●	20	16	11.7	180	6°	
	NT-V20R-SDQC%/07-25	●	●	25	20	13.7	200	5°	
11	NT-V16Q-SDQC%/11-20	●	●	20	16	11.5	180	6°	DC□11T3
	NT-V20R-SDQC%/11-25	●	●	25	20	14.4	200	5°	
	NT-V25S-SDQC%/11-30	●	●	30	25	16.9	250	4°	

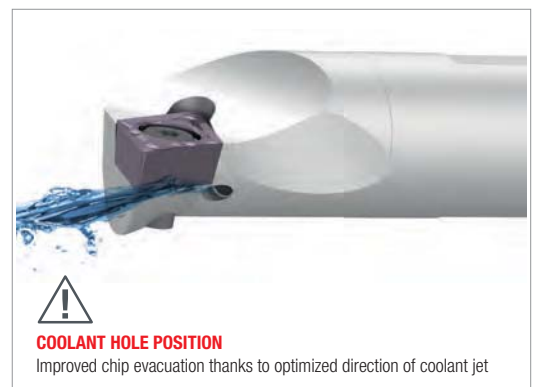
● stock standard

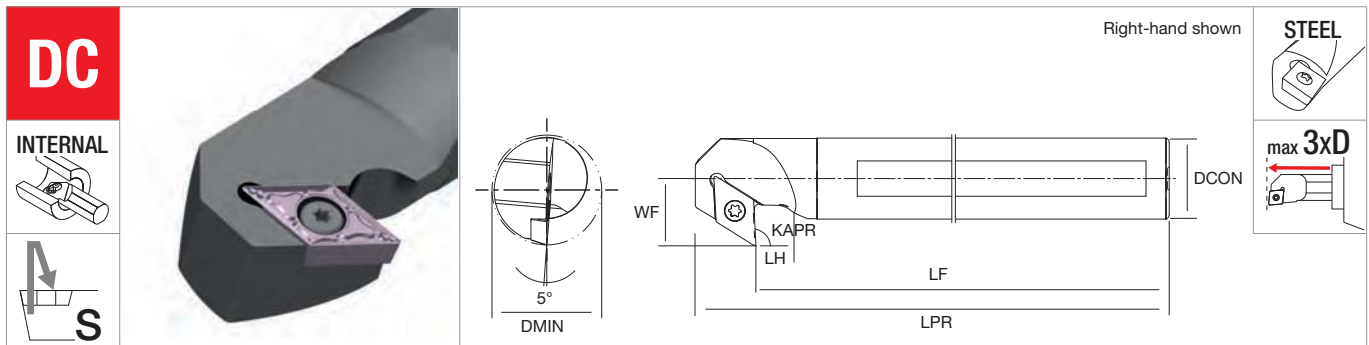


NT-V10K-SDQC%/07-13	NT-ST010	NT-FT07
NT-V12M-SDQC%/07-16		
NT-V16Q-SDQC%/07-20		
NT-V20R-SDQC%/07-25		
NT-V16Q-SDQC%/11-20	NT-ST035	NT-FT15
NT-V20R-SDQC%/11-25		
NT-V25S-SDQC%/11-30		



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DC□11T3	page 14	page 42	-	page 73





S SDZC Internal turning (KAPR 93°)			R	L	DMIN	DCON	WF	LF	LPR	GAMO	KG	MIID

07	NT-S10M-SDZC%/07	● ●	14	10	8.5	139	150	10°	DC□□0702
	NT-S12M-SDZC%/07	● ●	17	12	10.5	139	150	9°	
	NT-S16Q-SDZC%/07	● ●	21	16	12.5	169	180	8°	
11	NT-S20R-SDZC%/11	● ●	26	20	15.5	184	200	8°	DC□□11T3
	NT-S25R-SDZC%/11	○ ○	33	25	18	180	200	6°	
	NT-S32S-SDZC%/11	○ ○	38	32	21.5	230	250	4°	

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S10M-SDZC%/07	NT-ST010	NT-FT07
NT-S12M-SDZC%/07		
NT-S16Q-SDZC%/07		
NT-S20R-SDZC%/11	NT-ST035	NT-FT15
NT-S25R-SDZC%/11		
NT-S32S-SDZC%/11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

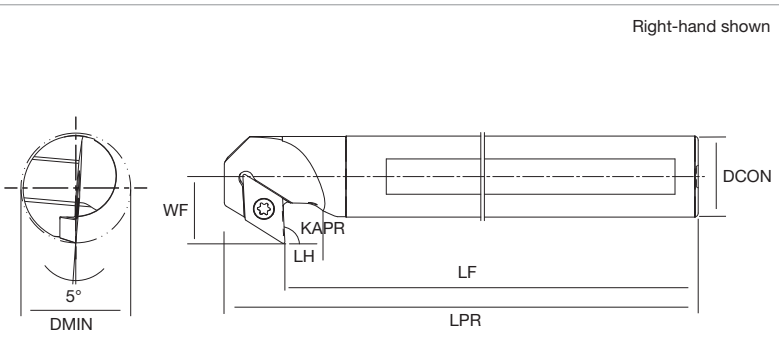
DC□□0702	page 14	page 42	-	page 73
DC□□11T3	page 14	page 42	-	page 73

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

TURNING



DC
INTERNAL
S



Right-hand shown
VORTEX
max 5xD
INTERNAL COOLANT

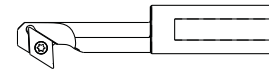
THREADING

V SDZC Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	LH	LPR	KG	MIID
--	--	---	---	------	------	----	----	----	-----	----	------

07	NT-V10L-SDZC%/07-14	●	●	14	10	8.7	130.5	14	140		DC□□0702
	NT-V12M-SDZC%/07-16	●	●	16	12	9.7	139.5	12.5	150		
	NT-V16Q-SDZC%/07-14*	●	●	14	16	13	170	30	180		
	NT-V16Q-SDZC%/07-20	●	●	20	16	11.7	169.5	17.5	180		
11	NT-V16Q-SDZC%/11-23	●	●	23	16	14.5	165	15	180		DC□□11T3
	NT-V20R-SDZC%/11-20*	●	●	20	20	16.1	185	40	200		
	NT-V20R-SDZC%/11-27	●	●	27	20	16.5	185	15	200		
	NT-V25S-SDZC%/11-32	●	●	32	25	19	235	15	250		

● stock standard

*Reduced neck



GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH

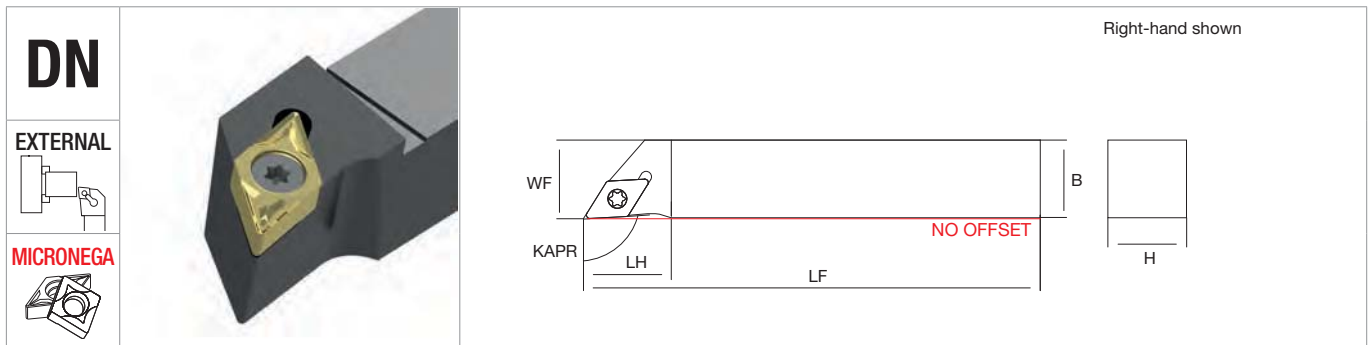
MILLING

NT-V10L-SDZC%/07-14	NT-ST010	NT-FT07
NT-V12M-SDZC%/07-16		
NT-V16Q-SDZC%/07-14		
NT-V16Q-SDZC%/07-20		
NT-V16Q-SDZC%/11-23	NT-ST035	NT-FT15
NT-V20R-SDZC%/11-20		
NT-V20R-SDZC%/11-27		
NT-V25S-SDZC%/11-32		

DRILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
DC□□0702	page 14	page 42	-	page 73
DC□□11T3	page 14	page 42	-	page 73

ACCESSORIES



DN EXTERNAL MICRONEGA			H	B	WF	LF	LH	KG	MIID	
	R	L								

MICRO	MICRO DN External Turning (KAPR 95°)		H	B	WF	LF	LH	KG	MIID
	R	L							
	NT-EX10H-MICRO-DN ^{RH/LH}	● ●	10	10	10	100	18		MICRO DN
	NT-EX12H-MICRO-DN ^{RH/LH}	● ●	12	12	12	100	18		
	NT-EX16K-MICRO-DN ^{RH/LH}	● ●	16	16	16	120	18		
	NT-EX20K-MICRO-DN ^{RH/LH}	● ●	20	20	20	120	18		
	NT-EX25M-MICRO-DN ^{RH/LH}	● ●	25	25	25	150	18		

● stock standard



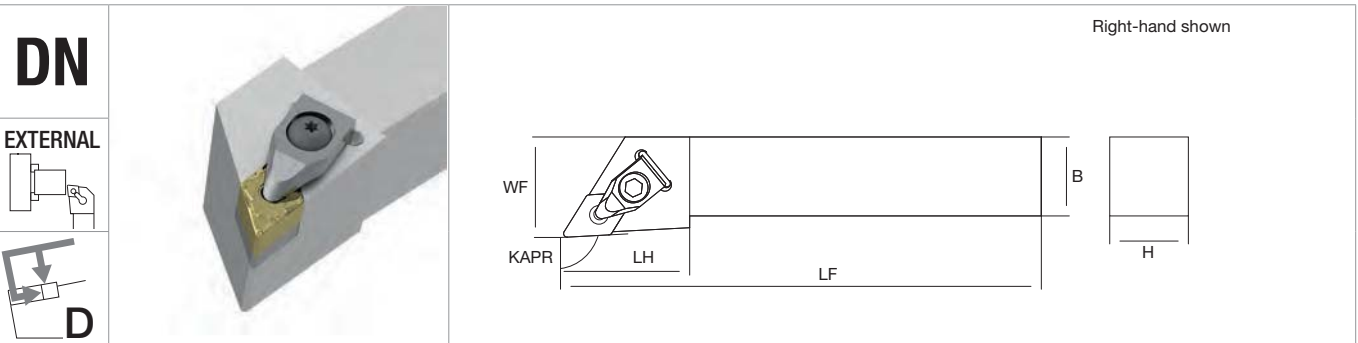
NT-EX10H-MICRO-DN ^{RH/LH}	NT-ST400	NT-FT10
NT-EX12H-MICRO-DN ^{RH/LH}		
NT-EX16K-MICRO-DN ^{RH/LH}		
NT-EX20K-MICRO-DN ^{RH/LH}		
NT-EX25M-MICRO-DN ^{RH/LH}		



MICRO DN	page 16	page 43	-	page 75
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- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING



DN	EXTERNAL			H	B	WF	LF	LH	KG	MIID
	DDJN									

THREADING

		R	L	H	B	WF	LF	LH	KG	MIID
11	NT-DDJN [®] /L1616H11X	●	●	16	16	20	100	36		DN□□1104
	NT-DDJN [®] /L2020K11X	●	●	20	20	25	125	36		
	NT-DDJN [®] /L2525M11X	●	●	25	25	32	150	36		
15	NT-DDJN [®] /L2020K1506X	●	●	20	20	25	125	43		DN□□1506 (DN□□1504)*
	NT-DDJN [®] /L2525M1506X	●	●	25	25	32	150	43		
	NT-DDJN [®] /L3225P1506X	●	●	32	25	32	170	43		

● stock standard

*For DN□□1504 please purchase separately shim NT-SH025

GROOVING



NT-DDJN [®] /L1616H11X	NT-SH007	NT-ST250	NT-WR020	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DDJN [®] /L2020K11X							
NT-DDJN [®] /L2525M11X							
NT-DDJN [®] /L2020K1506X	NT-SH045*	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-DDJN [®] /L2525M1506X							
NT-DDJN [®] /L3225P1506X							

*Shim for DNMG1504: NT-SH025

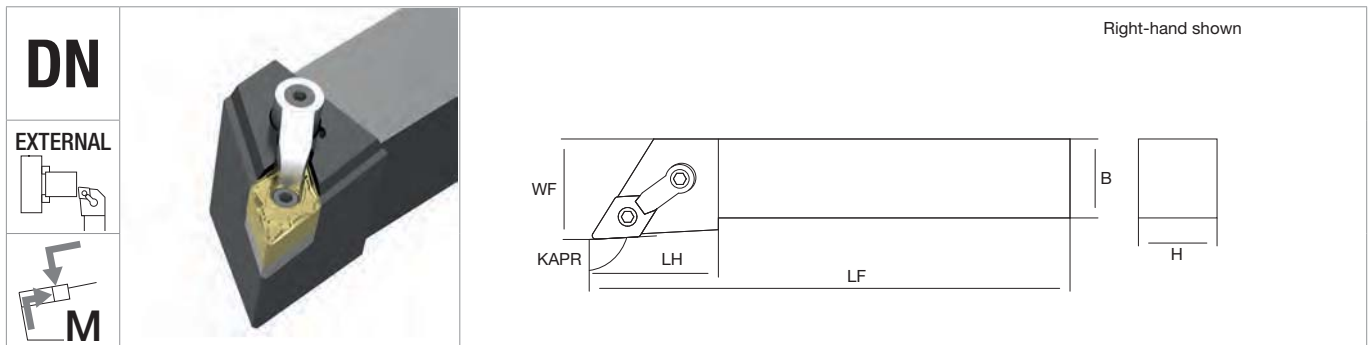
MILLING



DN□□1104	page 16	-	-	-
DN□□1504	-	page 43	-	-
DN□□1506	page 16	page 43	page 59	page 75

DRILLING

ACCESSORIES



DN	EXTERNAL				Right-hand shown					

MDJN			H	B	WF	LF	LH		MIID	
External turning (KAPR 93°)										
		R L								

15	NT-MDJN®/.2020K1506	●	●	20	20	25	125	37		
	NT-MDJN®/.2525M1506	●	●	25	25	32	150	37		DN□□1506
	NT-MDJN®/.3232P1506	●	●	32	32	40	170	42		(DN□□1504)*

● stock standard

*For DN□□1504 please purchase separately shim **NT-SH025**



NT-MDJN®/.2020K1506					
NT-MDJN®/.2525M1506	NT-SH045*	NT-SP025	NT-CS025	NT-SC010	NT-WR030
NT-MDJN®/.3232P1506					

*Shim for DNMG1504: **NT-SH025**



DN□□1504	-	page 43	-	-
DN□□1506	page 16	page 43	page 59	page 75

TURNING

THREADING

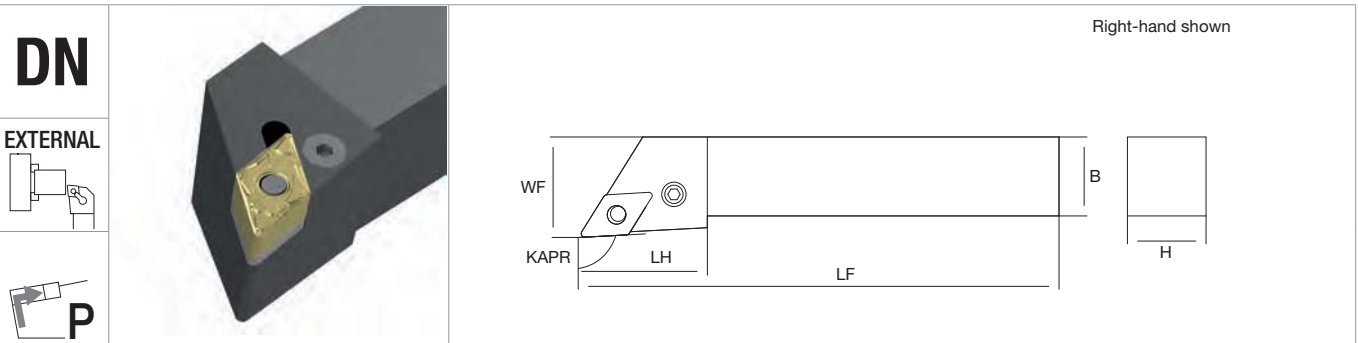
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



DN	EXTERNAL	P	PDJN		H	B	WF	LF	LH		MIID	
			External turning (KAPR 93°)									

15	NT-PDJN[®]/L2525M1506	● ●	25	25	32	150	36		DN□1506
-----------	---------------------------------------	-----	----	----	----	-----	----	--	---------

● stock standard

THREADING

Spare Parts	SHIM	PLUG	LEVER	LEVER SCREW	WRENCH
NT-PDJN[®]/L2525M1506	NT-SH020	NT-SR020	NT-LL020	NT-SC020	NT-WR030

GROOVING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
DN□1506	page 16	page 43	page 59	page 75

MILLING

DRILLING

ACCESSORIES

DN

INTERNAL

MICRONEGA

Right-hand shown

STEEL

max 3xD

INTERNAL COOLANT

A MICRO DN									
Internal turning (KAPR 95°)									
		R	L	DMIN	DCON	WF	LF	GAMO	MIID

MICRO			15	10	9.3	125	19°	MICRO DN
	●	●	16	12	9	150	17°	
			20	16	11	200	17°	
			24	20	13	200	17°	

● stock standard

Spare Parts	INSERT SCREW 	INSERT WRENCH
-------------	------------------	-------------------

NT-A10K-MICRO-DN ^{RH/LH}	NT-ST400	NT-FT10
NT-A12M-MICRO-DN ^{RH/LH}		
NT-A16R-MICRO-DN ^{RH/LH}		
NT-A20R-MICRO-DN ^{RH/LH}		

Inserts	CARBIDE 	PCBN 	CERAMIC 	DIAMOND
MICRO DN	page 16	page 43	-	page 75

TURNING

THREADING

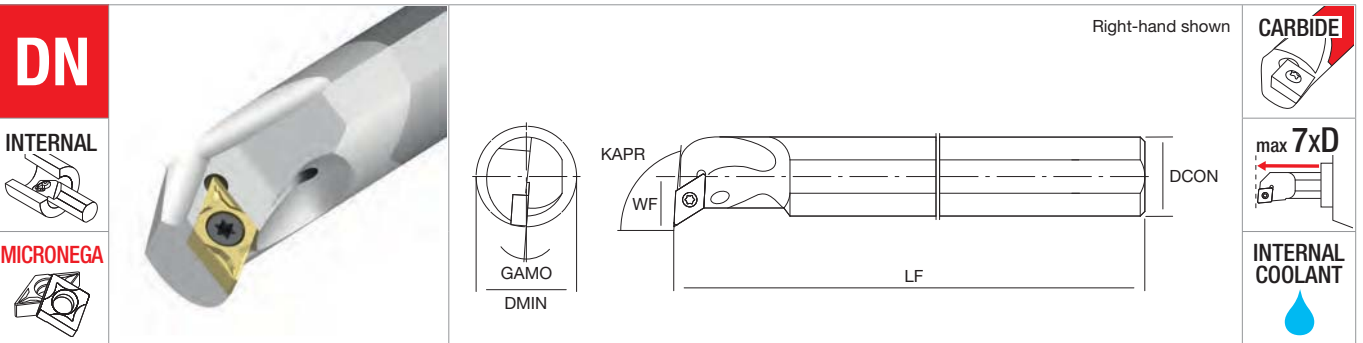
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

DN INTERNAL MICRONEGA		E MICRO DN Internal turning (KAPR 95°)		DMIN	DCON	WF	LF	GAMO	KG	MIID	INTERNAL COOLANT
		R	L								

MICRO			DMIN	DCON	WF	LF	GAMO	MICRO DN
	R	L						
	●	●	15	10	9.3	125	19°	
	●	●	16	12	9	150	17°	
	●	●	20	16	11	200	17°	
	●	●	24	20	13	200	17°	

● stock standard

GROOVING

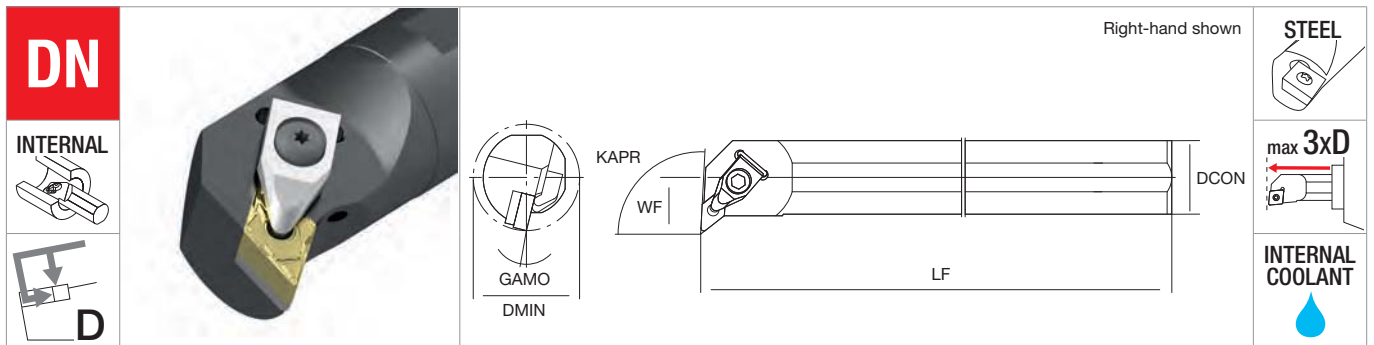
Spare Parts	INSERT SCREW	INSERT WRENCH
NT-E10K-MICRO-DN ^{RH/LH}	NT-ST400	NT-FT10
NT-E12M-MICRO-DN ^{RH/LH}		
NT-E16R-MICRO-DN ^{RH/LH}		
NT-E20R-MICRO-DN ^{RH/LH}		

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
MICRO DN	page 16	page 43	-	page 75

DRILLING

ACCESSORIES



DN	INTERNAL	D	A DDUN					KG	MIID		
			Internal turning (KAPR 93°)								
			R	L	DMIN	DCON	WF	LF	GAMO		

15	NT-A25R-DDUN[®]/L1506	● ●	32	25	17	200	16°		DN□□1506
	NT-A32S-DDUN[®]/L1506	● ●	40	32	22	250	12°		
	NT-A40T-DDUN[®]/L1506	● ●	50	40	27	300	10°		

● stock standard



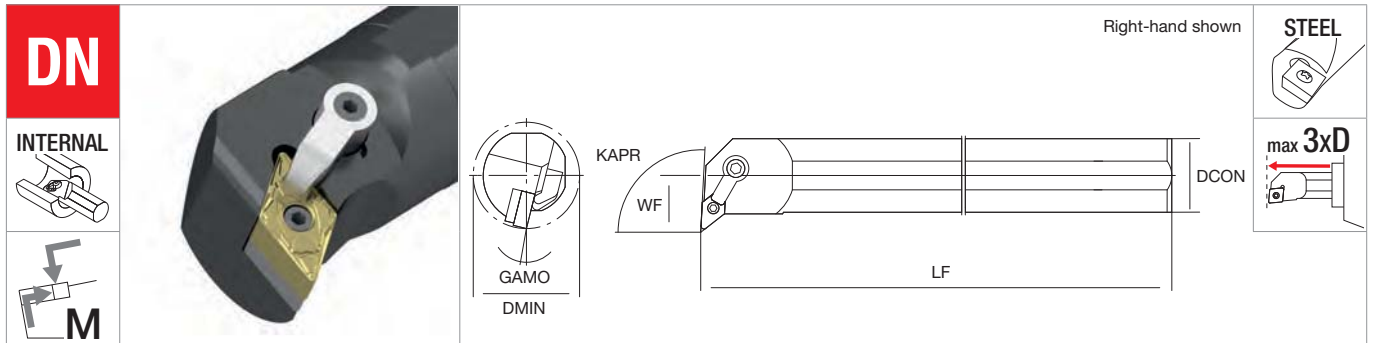
NT-A25R-DDUN[®]/L1506	NT-SH020	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-A32S-DDUN[®]/L1506							
NT-A40T-DDUN[®]/L1506							



DN□□1506	page 16	page 43	page 59	page 75
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TURNING



THREADING

DN		INTERNAL		Right-hand shown	STEEL	max 3xD							
		S MDUN					DMIN	DCON	WF	LF	GAMO	KG	MIID
		Internal turning (KAPR 93°)											
		R	L										
15	NT-S32S-MDUN [®] /L1506	●	●	40	32	22	250	17°					
	NT-S40T-MDUN [®] /L1506	●	●	50	40	27	350	15°			DN□1506		
	NT-S50U-MDUN [®] /L1506	●	●	63	50	35	300	12°			(DN□1504)*		

● stock standard

*For DN□1504 please purchase separately shim NT-SH025

GROOVING

Spare Parts	SHIM	ECCENTRIC PIN	CLAMP	CLAMP SCREW	WRENCH
NT-S32S-MDUN [®] /L1506				NT-SC008	
NT-S40T-MDUN [®] /L1506	NT-SH045*	NT-SP025	NT-CS025	NT-SC010	NT-WR030
NT-S50U-MDUN [®] /L1506					

*Shim for DNMG1504: NT-SH025

MILLING


Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
DN□1504	-	page 43	-	-
DN□1506	page 16	page 43	page 59	page 75

DRILLING

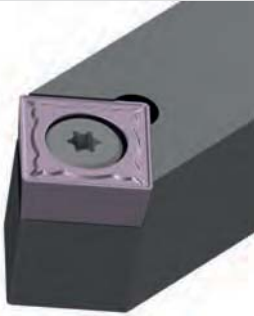
ACCESSORIES

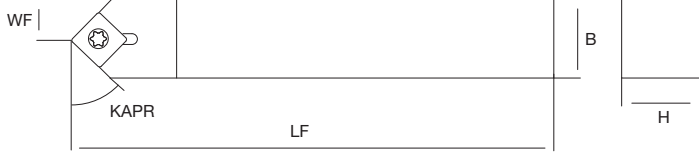
SC

EXTERNAL



S





SSDCN
External turning (KAPR 45°)

	H	B	WF	LF	KG	MIID		
--	---	---	----	----	----	------	--	--

09	NT-SSDCN2020K09	●	20	20	10	125		SC□□09T3		
	NT-SSDCN2525M09	●	25	25	12.5	150				
12	NT-SSDCN2020K12	●	20	20	10	125		SC□□1204		
	NT-SSDCN2525M12	●	25	25	12.5	150				

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-SSDCN2020K09	NT-ST020	NT-FT15
NT-SSDCN2525M09		
NT-SSDCN2020K12	NT-ST050	NT-FT15
NT-SSDCN2525M12		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

SC□□09T3	page 20	-	page 62	-
SC□□1204	page 20	-	page 62	-

TURNING

THREADING

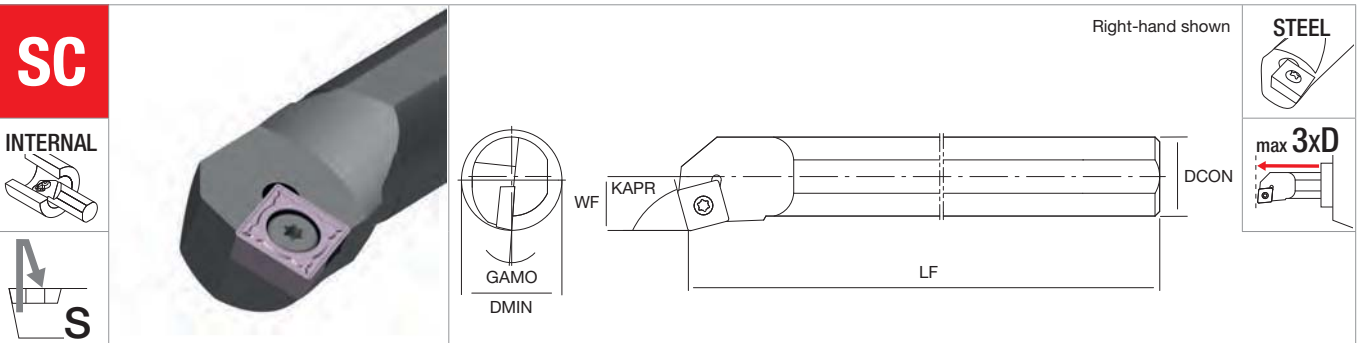
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



SC	INTERNAL	S	S SSKC Internal turning (KAPR 75°)	DMIN	DCON	WF	LF	GAMO	KG	MIID
	R			L						

09	NT-S12M-SSKC%/L09	●	●	16	12	8.5	150	12°	SC□□09T3
	NT-S16Q-SSKC%/L09	●	●	20	16	11	180	11°	
	NT-S20R-SSKC%/L09	●	●	25	20	13	200	6°	
	NT-S25R-SSKC%/L09	●	●	31	25	15	200	6°	
12	NT-S25R-SSKC%/L12	●	●	32	25	17	200	7°	SC□□1204
	NT-S32S-SSKC%/L12	●	●	40	32	22	250	7°	

● stock standard

THREADING

GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S12M-SSKC%/L09	NT-ST020	NT-FT15
NT-S16Q-SSKC%/L09		
NT-S20R-SSKC%/L09		
NT-S25R-SSKC%/L09		
NT-S25R-SSKC%/L12	NT-ST050	NT-FT15
NT-S32S-SSKC%/L12		

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND


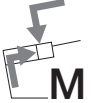
SC□□09T3	page 20	-	page 62	-
SC□□1204	page 20	-	page 62	-

DRILLING


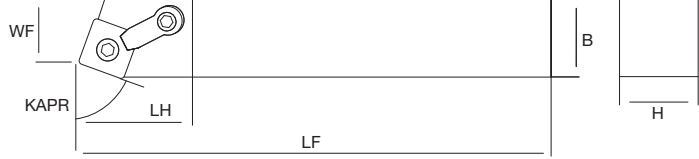
ACCESSORIES

SN

EXTERNAL

Right-hand shown

MSBN

External turning (KAPR 75°)

	R	L	H	B	WF	LF	LH	KG	MIID
--	---	---	---	---	----	----	----	----	------

12	NT-MSBN®/2020K12	● ●	20	20	17	125	37		SN□1204
	NT-MSBN®/2525M12	● ●	25	25	22	150	37		
	NT-MSBN®/3232P12	○ ○	32	32	27	170	42		
19	NT-MSBN®/3232P19	○ ○	32	32	27	170	42		SN□1906
	NT-MSBN®/4040S19	○ ○	40	40	35	250	42		

● stock standard, ○ non-standard stock

Spare Parts	SHIM	ECCENTRIC PIN	CLAMP	CLAMP SCREW	WRENCH
NT-MSBN®/2020K12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSBN®/2525M12					
NT-MSBN®/3232P12					
NT-MSBN®/3232P19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040
NT-MSBN®/4040S19					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
SN□1204	page 21	page 46	page 63	-
SN□1906	page 22	-	-	-

TURNING

THREADING

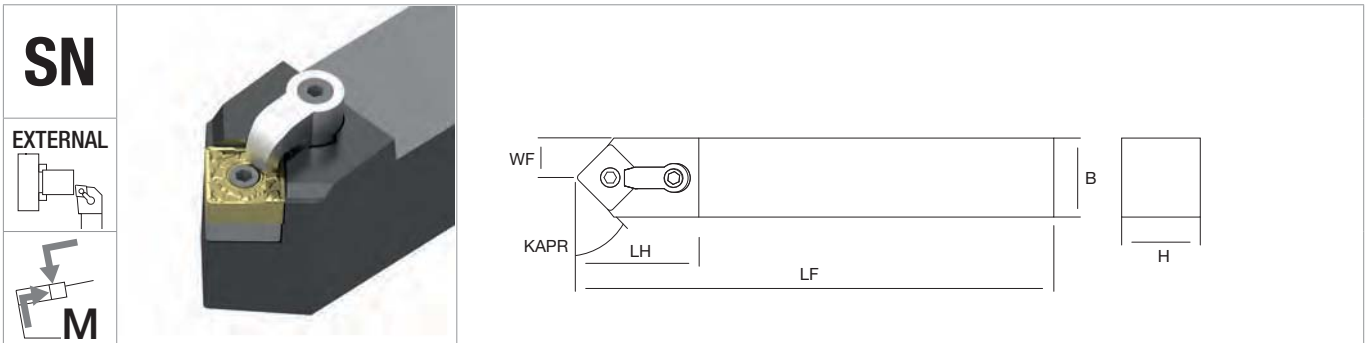
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



<p>SN</p> <p>EXTERNAL</p> <p>M</p>	<p>MSDNN</p> <p>External turning (KAPR 45°)</p>		H	B	WF	LF	LH	KG	MIID

THREADING

12	NT-MSDNN2020K12	●	20	20	10	125	35	SN□□1204
	NT-MSDNN2525M12	●	25	25	12.5	150	37	
	NT-MSDNN3232P12	○	32	32	16	170	43	

● stock standard, ○ non-standard stock

GROOVING

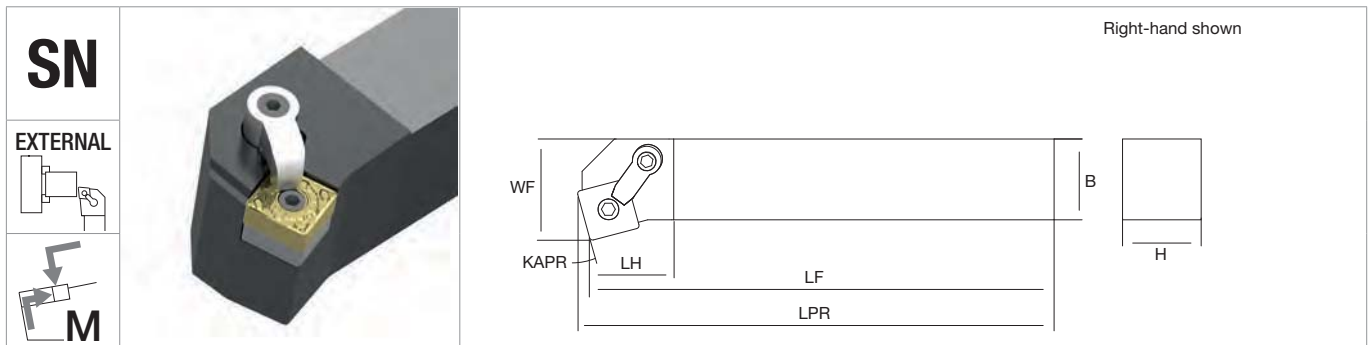
Spare Parts	SHIM	ECCENTRIC PIN	CLAMP	CLAMP SCREW	WRENCH
NT-MSDNN2020K12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSDNN2525M12					
NT-MSDNN3232P12					

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
SN□□1204	page 21	page 46	page 63	-

DRILLING

ACCESSORIES



SN	EXTERNAL	MSKN External turning (KAPR 75°)	H	B	WF	LF	LH	LPR	KG	MIID
			R	L						

12	NT-MSKN®/.2020K12	● ●	20	20	25	122	37	125		SN□□1204
	NT-MSKN®/.2525M12	● ●	25	25	32	147	37	150		
	NT-MSKN®/.3232P12	○ ○	32	32	40	167	42	170		
19	NT-MSKN®/.4040S19	○ ○	40	40	50	247	42	250		SN□□1906

● stock standard, ○ non-standard stock



NT-MSKN®/.2020K12					
NT-MSKN®/.2525M12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSKN®/.3232P12					
NT-MSKN®/.4040S19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040



SN□□1204	page 21	page 46	page 63	-
SN□□1906	page 22	-	-	-

TURNING

THREADING

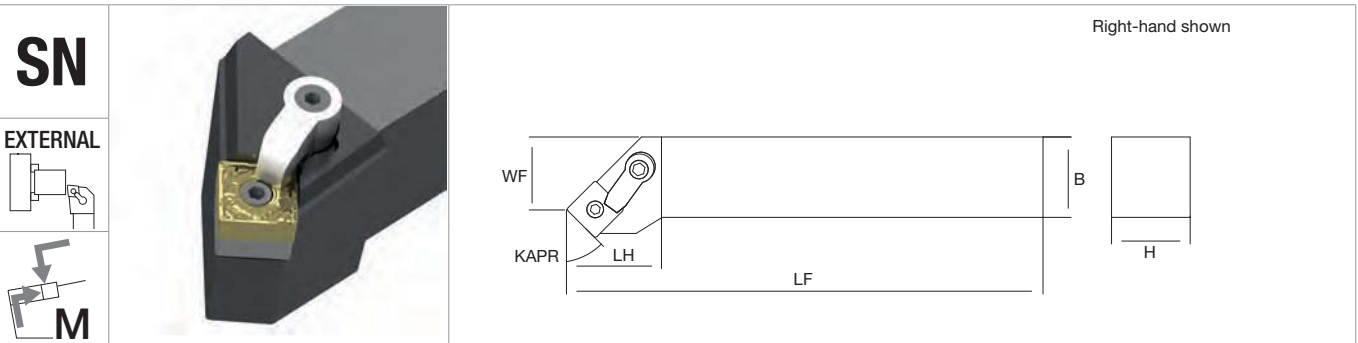
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



SN

EXTERNAL



MSSN

External turning (KAPR 45°)

	R	L	H	B	WF	LF	LH	KG	MIID
--	---	---	---	---	----	----	----	----	------

12	NT-MSSN%/2020K12	●	●	20	20	25	125	35	SN□1204
	NT-MSSN%/2525M12	●	●	25	25	32	150	35	
	NT-MSSN%/3232P12	○	○	32	32	40	170	42	
19	NT-MSSN%/3232P19	○	○	32	32	40	170	42	SN□1906
	NT-MSSN%/4040S19	○	○	40	40	40	250	42	

● stock standard, ○ non-standard stock

THREADING

GROOVING



NT-MSSN%/2020K12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSSN%/2525M12					
NT-MSSN%/3232P12					
NT-MSSN%/3232P19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040
NT-MSSN%/4040S19					

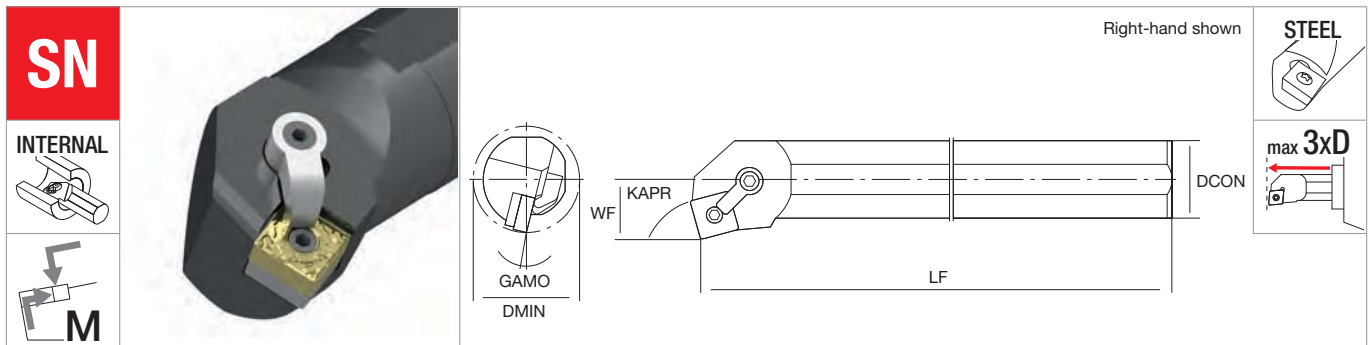
MILLING



SN□1204	page 21	page 46	page 63	-
SN□1906	page 22	-	-	-

DRILLING

ACCESSORIES



SN INTERNAL 		S MSKN Internal turning (KAPR 75°)	R L	DMIN	DCON	WF	LF	GAMO	KG	MIID

12	NT-S20R-MSKN [®] /L12	● ●	25	20	13	200	17°	SN□□1204
	NT-S25R-MSKN [®] /L12	● ●	32	25	17	200	14°	
	NT-S32S-MSKN [®] /L12	● ●	40	32	22	250	14°	
	NT-S40T-MSKN [®] /L12	● ●	50	40	27	300	15°	
	NT-S50U-MSKN [®] /L12	● ●	63	50	35	350	12°	
19	NT-S50U-MSKN [®] /L19	○ ○	63	50	35	350	8°	SN□□1906

● stock standard, ○ non-standard stock



NT-S20R-MSKN [®] /L12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MSKN [®] /L12				NT-SC008		
NT-S32S-MSKN [®] /L12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MSKN [®] /L12						
NT-S50U-MSKN [®] /L12						
NT-S50U-MSKN [®] /L19	NT-SH090	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040



SN□□1204	page 21	page 46	page 63	-
SN□□1906	page 22	-	-	-

TURNING

THREADING

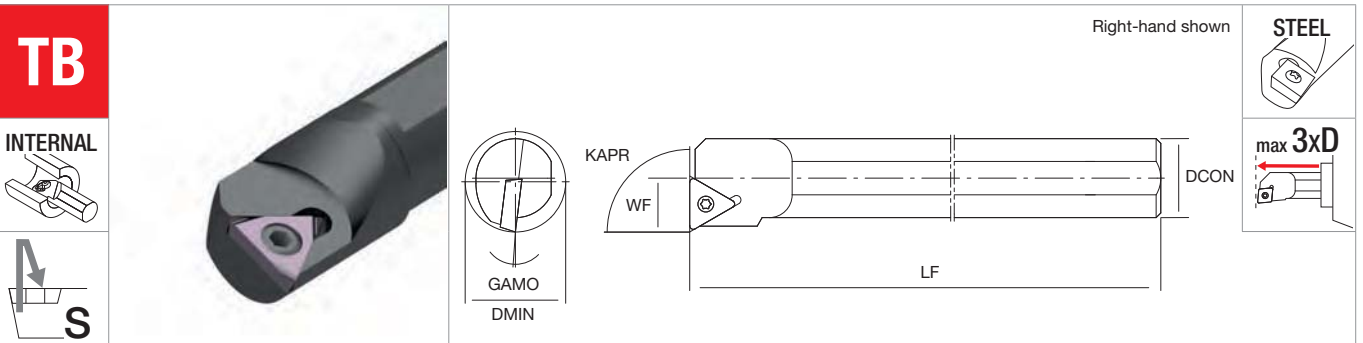
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



S STUB Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID
		●	●	10	8	4	100	12°		TB□□061

06	NT-S08H-STUB%/06	●	●	10	8	4	100	12°		TB□□061
----	------------------	---	---	----	---	---	-----	-----	--	---------

● stock standard

THREADING

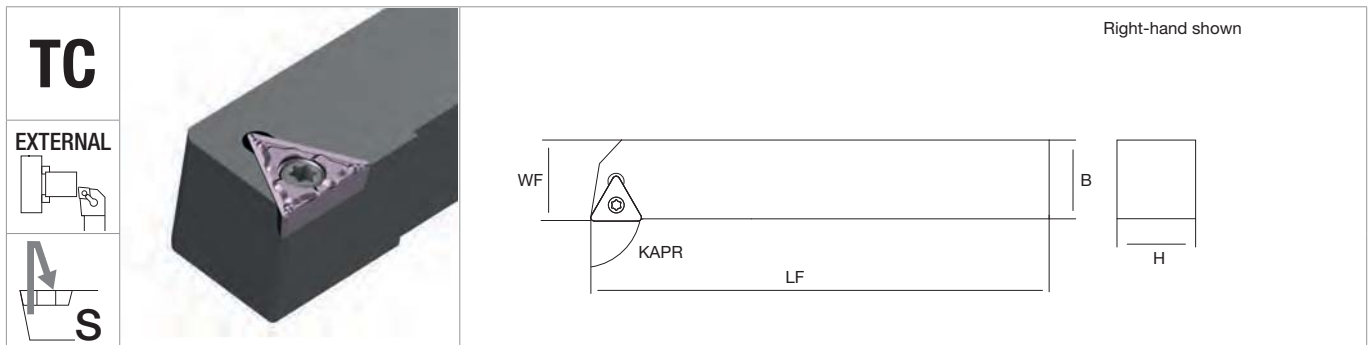
Spare Parts	INSERT SCREW	INSERT WRENCH
	NT-S08H-STUB%/06	NT-ST003

GROOVING

MILLING

DRILLING

ACCESSORIES



TC																	
EXTERNAL																	
S																	
STAC																	
External turning (KAPR 90°)																	
		R L		H		B		WF		LF		KG		MIID			

09	NT-STAC%/L0808H09	○	○	8	8	8.5	100		TC□□0902		
	NT-STAC%/L1010H09	○	○	10	10	10.5	100				
11	NT-STAC%/L1212H11	●	●	12	12	12.5	100		TC□□1102		
	NT-STAC%/L1616H11	●	●	16	16	16.5	100				

● stock standard, ○ non-standard stock



NT-STAC%/L0808H09	NT-ST004	NT-FT07
NT-STAC%/L1010H09		
NT-STAC%/L1212H11	NT-ST010	NT-FT07
NT-STAC%/L1616H11		



TC□□0902	page 24	-	-	page 76
TC□□1102	page 24	page 47	-	page 76

TURNING

THREADING

GROOVING

MILLING


DRILLING

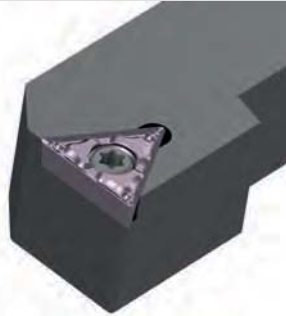
ACCESSORIES

TURNING

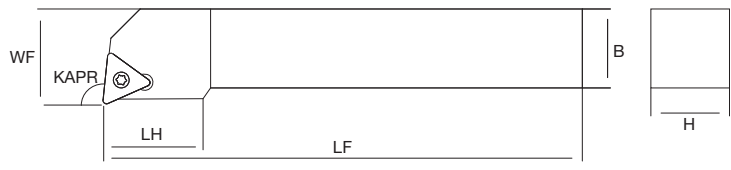
TC

EXTERNAL





Right-hand shown



THREADING

STFC			H	B	WF	LF	LH	KG	MIID
External turning (KAPR 91°)									
	R	L							

09	NT-STFC%/0808H09		○	○	8	8	10	100	12		TC□□0902
	NT-STFC%/1010H09		○	○	10	10	12	100	12		
11	NT-STFC%/1212H11		●	●	12	12	16	100	17		TC□□1102
	NT-STFC%/1616H11		●	●	16	16	20	100	18		
16	NT-STFC%/2020K16		●	●	20	20	25	125	22		TC□□16T3
	NT-STFC%/2525M16		●	●	25	25	32	150	25		

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-STFC%/0808H09	NT-ST004	NT-FT07
NT-STFC%/1010H09		
NT-STFC%/1212H11	NT-ST010	NT-FT07
NT-STFC%/1616H11		
NT-STFC%/2020K16	NT-ST020	NT-FT15
NT-STFC%/2525M16		

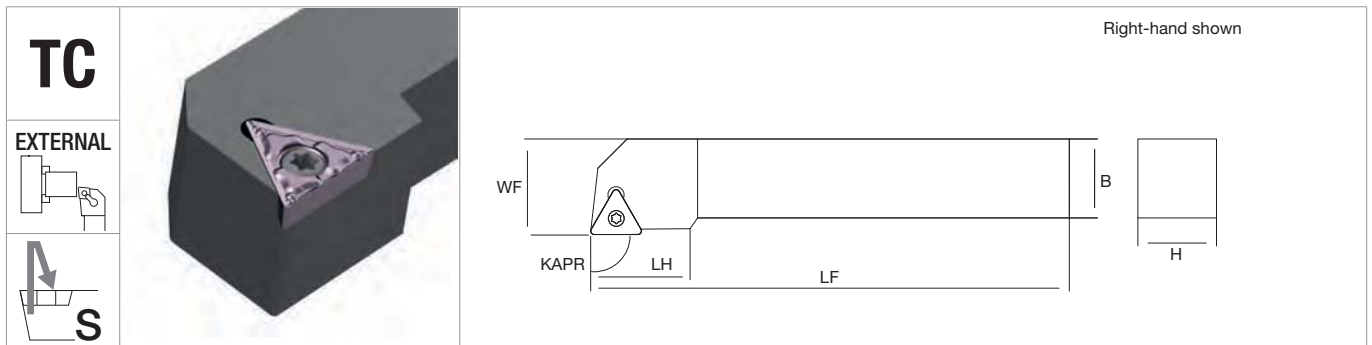
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

TC□□0902	page 24	-	-	page 76
TC□□1102	page 24	page 47	-	page 76
TC□□16T3	page 24	page 47	-	page 76

DRILLING

ACCESSORIES



STGC External turning (KAPR 91°)		R	L	H	B	WF	LF	LH	KG	MIID

11	NT-STGC%/L1212H11	○	○	12	12	16	100	17		TC□□1102
	NT-STGC%/L1616H11	○	●	16	16	20	100	18		
16	NT-STGC%/L2020K16	●	●	20	20	25	125	22		TC□□16T3
	NT-STGC%/L2525M16	●	●	25	25	32	150	25		

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-STGC%/L1212H11	NT-ST010	NT-FT07
NT-STGC%/L1616H11		
NT-STGC%/L2020K16	NT-ST020	NT-FT15
NT-STGC%/L2525M16		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

TC□□1102	page 24	page 47	-	page 76
TC□□16T3	page 24	page 47	-	page 76

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

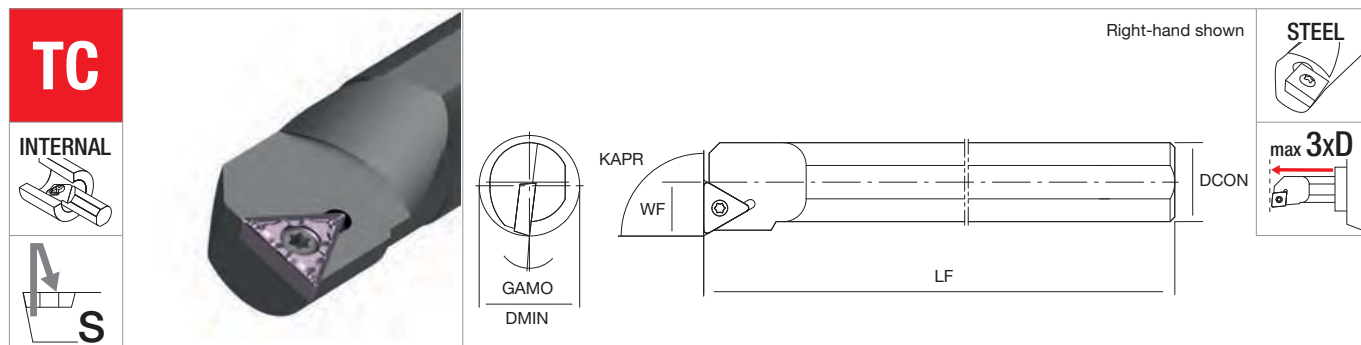
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



TC	INTERNAL	S	S STFC Internal turning (KAPR 91°)	DMIN	DCON	WF	LF	GAMO	KG	MIID
				R	L					

09	NT-S08H-STFC%/09	●	●	12	8	6	100	15°		TC□□0902
	NT-S10K-STFC%/09	●	●	14	10	7	125	15°		
	NT-S12M-STFC%/09	●	●	16	12	9	150	10°		
11	NT-S10K-STFC%/11	●	●	14	10	7	125	15°		TC□□1102
	NT-S12M-STFC%/11	●	●	14	12	7	150	10°		
	NT-S16K-STFC%/11	●	●	18	16	9	180	8°		
	NT-S20R-STFC%/11	●	●	25	20	13	200	3°		
16	NT-S20R-STFC%/16	●	●	25	20	13	200	8°		TC□□16T3
	NT-S25R-STFC%/16	●	●	32	25	17	200	6°		
	NT-S32S-STFC%/16	●	●	39	32	22	250	4°		

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH



NT-S08H-STFC%/09	NT-ST004	NT-FT07
NT-S10K-STFC%/09		
NT-S12M-STFC%/09		
NT-S10K-STFC%/11	NT-ST010	NT-FT07
NT-S12M-STFC%/11		
NT-S16K-STFC%/11		
NT-S20R-STFC%/11		
NT-S20R-STFC%/16	NT-ST030	NT-FT15
NT-S25R-STFC%/16		
NT-S32S-STFC%/16		


Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND


TC□□0902	page 24	-	-	page 76
TC□□1102	page 24	page 47	-	page 76
TC□□16T3	page 24	page 47	-	page 76

TC

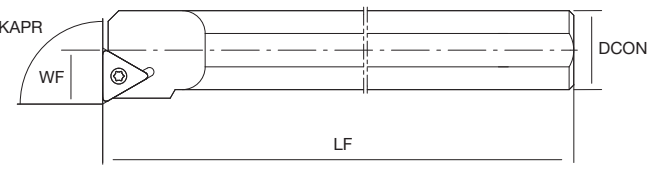
INTERNAL






GAMO
DMIN




KAPR
WF
LF
DCON

Right-hand shown


STEEL



max 3xD



INTERNAL COOLANT



A STFC			DMIN	DCON	WF	LF	GAMO		MIID
Internal turning (KAPR 91°)									
	R	L							

11	NT-A10K-STFC%/L11	● ●	14	10	7	125	15°	TC□□1102
	NT-A12M-STFC%/L11	● ●	14	12	7	150	10°	
	NT-A16Q-STFC%/L11	● ●	18	16	9	180	8°	
	NT-A20R-STFC%/L11	● ●	25	20	13	200	3°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-A10K-STFC%/L11	NT-ST010	NT-FT07
NT-A12M-STFC%/L11		
NT-A16Q-STFC%/L11		
NT-A20R-STFC%/L11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

TC□□1102	page 24	page 47	-	page 76
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TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

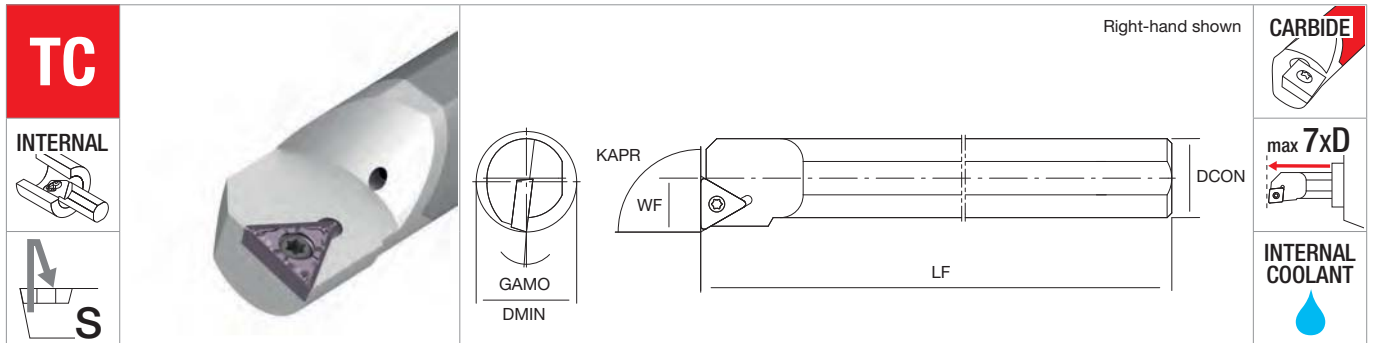
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



E STFC Internal turning (KAPR 91°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

11	NT-E10K-STFC%/L11	●	●	12	10	6	125	15°		TC□□1102
	NT-E12M-STFC%/L11	●	●	14	12	7	150	10°		
	NT-E16R-STFC%/L11	●	●	18	16	9	200	8°		
	NT-E20R-STFC%/L11	●	●	22	20	11	200	6°		

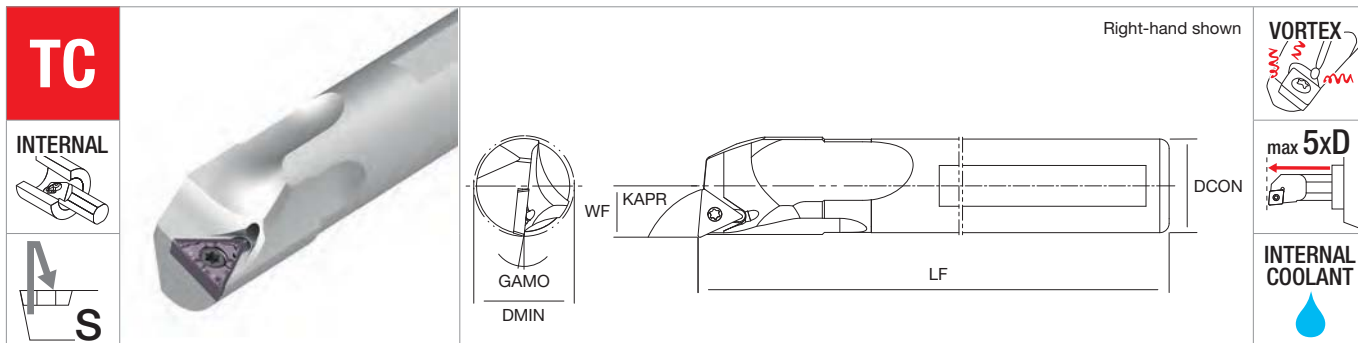
● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-E10K-STFC%/L11	NT-ST010	NT-FT07
NT-E12M-STFC%/L11		
NT-E16R-STFC%/L11		
NT-E20R-STFC%/L11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

TC□□1102	page 24	page 47	-	page 76
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TC INTERNAL 				DMIN	DCON	WF	LF	GAMO		MIID	
		V STLC Internal turning (KAPR 95°)									
		R	L								

				DMIN	DCON	WF	LF	GAMO		MIID	
09	NT-V08H-STLC%/09-10	● ●		10	8	5	100	14°		TC□□0902	
	NT-V10K-STLC%/09-12	● ●		12	10	6	125	12°			
	NT-V12M-STLC%/09-14	● ●		14	12	7	150	10°			
11	NT-V10K-STLC%/11-12	● ●		12	10	6	125	12°		TC□□1102	
	NT-V12M-STLC%/11-14	● ●		14	12	7	150	10°			
	NT-V16Q-STLC%/11-18	● ●		18	16	9	180	8°			
	NT-V20R-STLC%/11-22	● ●		22	20	11	200	6°			
16	NT-V20R-STLC%/16-25	● ●		25	20	12.5	200	8°		TC□□16T3	
	NT-V25S-STLC%/16-32	● ●		32	25	16	250	6°			

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-V08H-STLC%/09-10	NT-ST004	NT-FT07
NT-V10K-STLC%/09-12		
NT-V12M-STLC%/09-14		
NT-V10K-STLC%/11-12	NT-ST010	NT-FT07
NT-V12M-STLC%/11-14		
NT-V16Q-STLC%/11-18		
NT-V20R-STLC%/11-22		
NT-V20R-STLC%/16-25	NT-ST030	NT-FT15
NT-V25S-STLC%/16-32		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
TC□□0902	page 24	-	-	page 76
TC□□1102	page 24	page 47	-	page 76
TC□□16T3	page 24	page 47	-	page 76

TURNING

THREADING

GROOVING

MILLING


DRILLING

ACCESSORIES

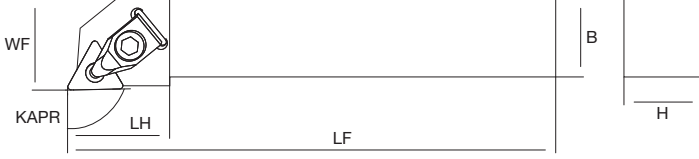
TURNING

TN

EXTERNAL



Right-hand shown



D

THREADING

DTGN
External turning (KAPR 91°)

		R	L	H	B	WF	LF	LH	KG	MIID
16	NT-DTGN [®] /2020K16X	●	●	20	20	25	125	33		TN□□1604
	NT-DTGN [®] /2525M16X	●	●	25	25	32	150	33		

● stock standard

GROOVING

Spare Parts

	SHIM	SHIM SCREW	CLAMP	SPRING	CLAMP SCREW	WRENCH
NT-DTGN [®] /2020K16X						
NT-DTGN [®] /2525M16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

MILLING

Inserts


	CARBIDE	PCBN	CERAMIC	DIAMOND
TN□□1604	page 25	page 48	page 65	page 78

DRILLING


ACCESSORIES

TN

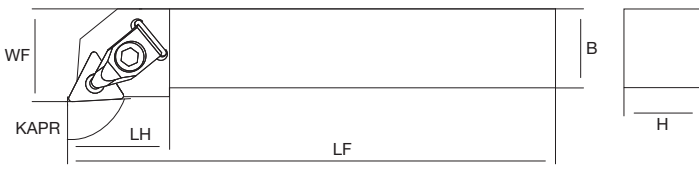
EXTERNAL



D



Right-hand shown



DTJN				H	B	WF	LF	LH	KG	MIID
External turning (KAPR 93°)		R	L							

16	NT-DTJN[®]/L2020K16X	●	●	20	20	25	125	33		TN□1604
	NT-DTJN[®]/L2525M16X	●	●	25	25	32	150	33		

● stock standard

Spare Parts	SHIM	SHIM SCREW	CLAMP	SPRING	CLAMP SCREW	WRENCH
						
NT-DTJN[®]/L2020K16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DTJN[®]/L2525M16X						

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				
TN□1604	page 25	page 48	page 65	page 78

TURNING

THREADING

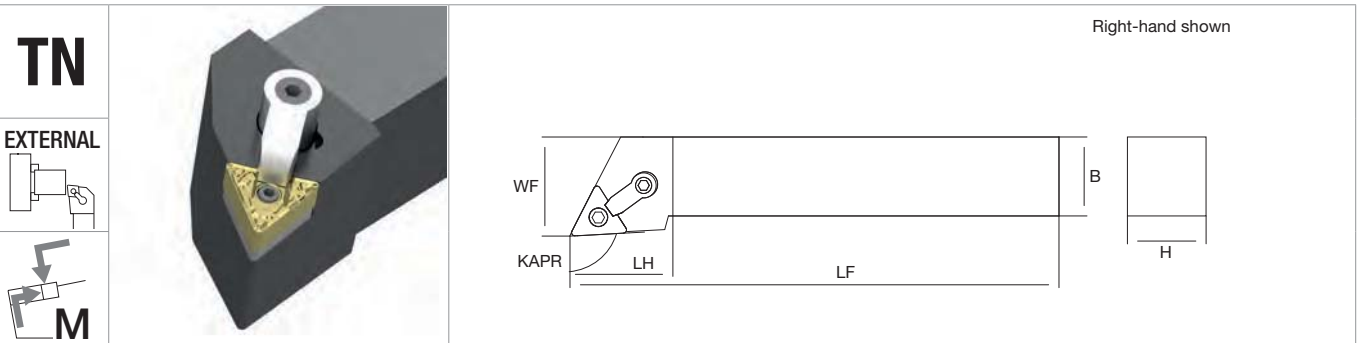
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

TN		Right-hand shown						
EXTERNAL								
M								
MTJN								
External turning (KAPR 93°)								
		H	B	WF	LF	LH	KG	MIID
		R	L					

16	NT-MTJN®/2020K16	●	●	20	20	25	125	33	TN□□1604
	NT-MTJN®/2525M16	●	●	25	25	32	150	35	
	NT-MTJN®/3232P16	●	●	32	32	40	170	43	
22	NT-MTJN®/2525M22	●	●	25	25	32	150	43	TN□□2204
	NT-MTJN®/3225P22	●	●	32	25	32	170	43	

● stock standard

GROOVING

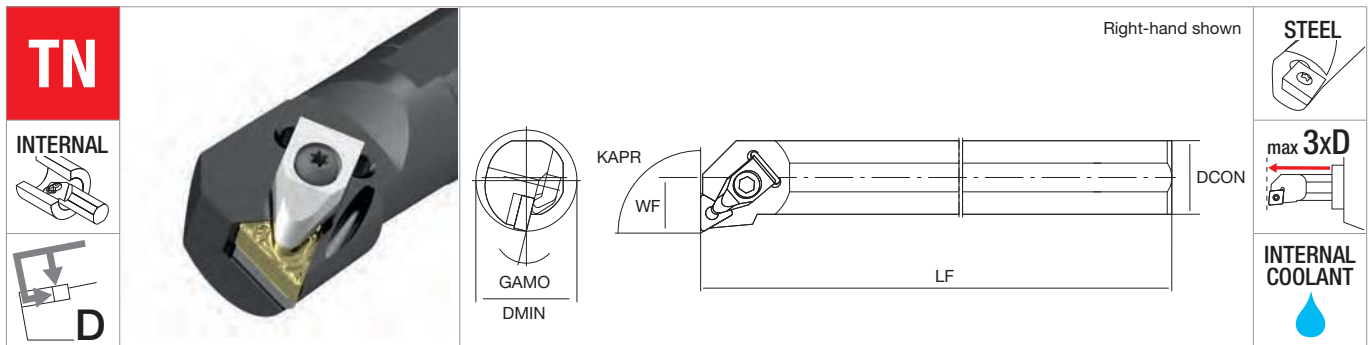
Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH
NT-MTJN®/2020K16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-MTJN®/2525M16					NT-SC010	
NT-MTJN®/3232P16						
NT-MTJN®/2525M22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040
NT-MTJN®/3225P22						

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
TN□□1604	page 25	page 48	page 65	page 78
TN□□2204	page 25	-	-	-

DRILLING

ACCESSORIES



A DTFN Internal turning (KAPR 91°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

16	NT-A25R-DTFN%/L16	● ●	32	25	17	200	13°			TN□1604
	NT-A32S-DTFN%/L16	● ●	40	32	22	250	13°			

● stock standard



NT-A25R-DTFN%/L16	NT-A32S-DTFN%/L16	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15
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TN□1604	page 25	page 48	page 65	page 78
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TURNING

THREADING

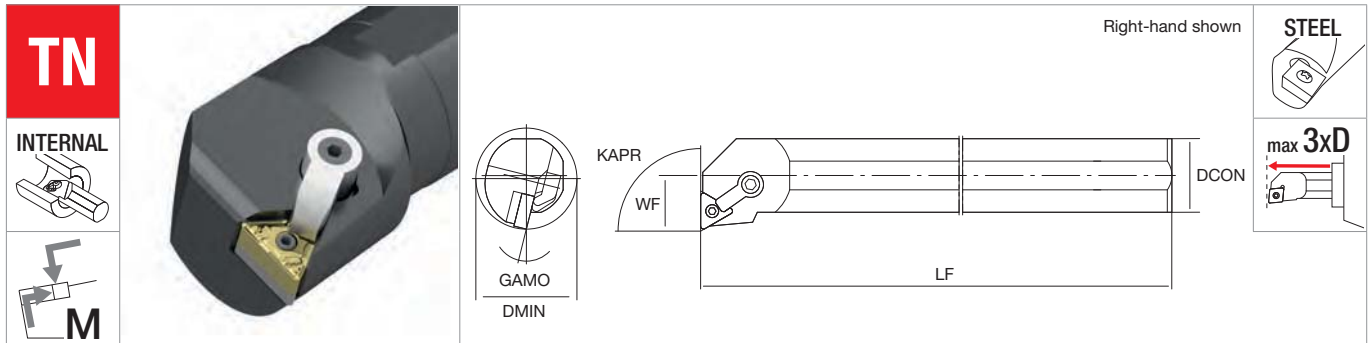
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

S MTUN Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

16	NT-S20R-MTUN [®] /L16	●	●	25	20	13	200	17°	TN001604
	NT-S25R-MTUN [®] /L16	●	●	32	25	17	200	12°	
	NT-S32S-MTUN [®] /L16	●	●	40	32	22	250	10°	
	NT-S40T-MTUN [®] /L16	●	●	50	40	27	300	10°	
	NT-S50U-MTUN [®] /L16	●	●	63	50	35	350	8°	
22	NT-S40T-MTUN [®] /L22	○	○	50	40	27	300	15°	TN002204
	NT-S50U-MTUN [®] /L22	○	○	63	50	35	350	12°	

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH

NT-S20R-MTUN [®] /L16	-	NT-SP030	NT-WR020	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MTUN [®] /L16				NT-SC008	NT-WR030	
NT-S32S-MTUN [®] /L16	NT-SH005	NT-SP020	NT-CS010	NT-SC010		
NT-S40T-MTUN [®] /L16			NT-SH008	NT-SP010		NT-WR030
NT-S50U-MTUN [®] /L16	NT-CS070	NT-SC070			NT-WR040	
NT-S40T-MTUN [®] /L22						
NT-S50U-MTUN [®] /L22						

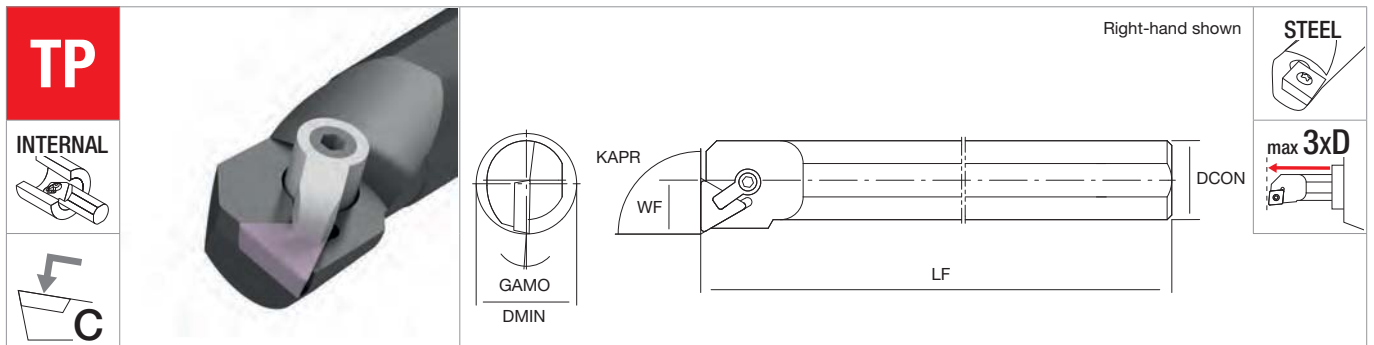
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

TN□1604	page 25	page 48	page 65	page 78
TN□2204	page 25	-	-	-

DRILLING

ACCESSORIES



TP INTERNAL		Internal turning (KAPR 93°)		DMIN	DCON	WF	LF	GAMO	KG	MIID	Right-hand shown	STEEL	max 3xD

11	NT-S12M-CTUP [®] /L11	●	●	16	12	9	150	0°	TP□□1103
	NT-S16Q-CTUP [®] /L11	●	●	20	16	11	180	3°	
	NT-S20R-CTUP [®] /L11	●	●	25	20	13	200	3°	
16	NT-S25R-CTUP [®] /L16	●	●	32	25	17	200	3°	TP□□1604
	NT-S32S-CTUP [®] /L16	●	●	40	32	22	250	3°	

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH

NT-S12M-CTUP [®] /L11	-	-	-	NT-CS003		NT-WR025
NT-S16Q-CTUP [®] /L11				NT-CS005	NT-SC005	
NT-S20R-CTUP [®] /L11						
NT-S25R-CTUP [®] /L16	NT-SH002	NT-ST022	NT-FT06	NT-CS010	NT-SC008	NT-WR030
NT-S32S-CTUP [®] /L16						

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

TP□□1103	-	-	page 66	-
TP□□1604	-	-	page 66	-

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

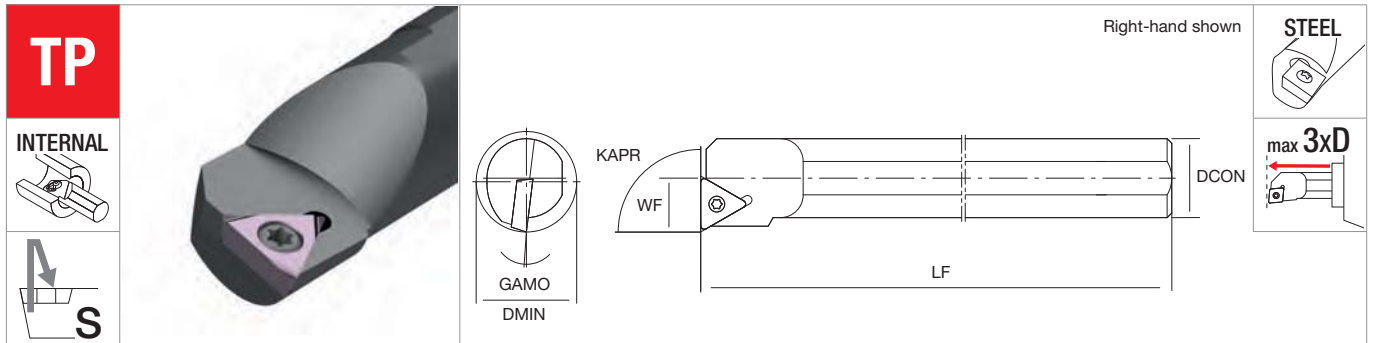
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



S STUP Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

09	NT-S10K-STUP ^{R/L} 09	●	●	12	10	6	125	8°		TP□□0902
	NT-S12M-STUP ^{R/L} 09	●	●	14	12	7	150	5°		
11	NT-S10K-STUP ^{R/L} 11	●	●	12	10	6	125	8°		TP□□1103
	NT-S12M-STUP ^{R/L} 11	●	●	14	12	7	150	7°		
	NT-S16K-STUP ^{R/L} 11	●	●	18	16	9	180	4°		
	NT-S20R-STUP ^{R/L} 11	●	●	22	20	11	200	2°		

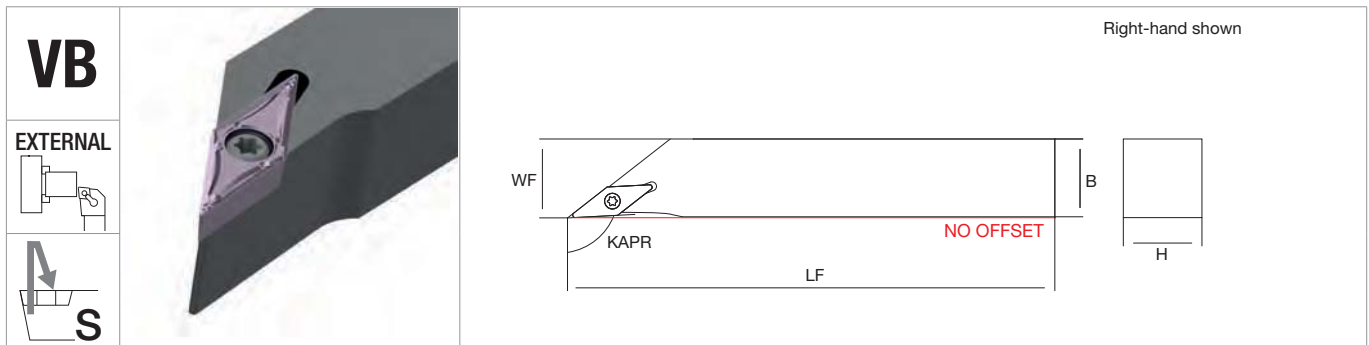
● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S10K-STUP ^{R/L} 09	NT-ST005	NT-FT08
NT-S12M-STUP ^{R/L} 09		
NT-S10K-STUP ^{R/L} 11	NT-ST014	NT-FT10
NT-S12M-STUP ^{R/L} 11		
NT-S16K-STUP ^{R/L} 11	NT-ST015	
NT-S20R-STUP ^{R/L} 11		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

TP□□0902	page 28	page 49	-	page 79
TP□□1103	page 28	page 49	-	page 79



VB EXTERNAL 		SVJB N External turning (KAPR 93°)		H	B	WF	LF	KG	MIID		
				R	L						

11	NT-SVJB%/L1212K11N	●	●	12	12	12	125		VB□1103		
	NT-SVJB%/L1616K11N	●	●	16	16	16	125				
16	NT-SVJB%/L1616H16N	●	●	16	16	16	100		VB□1604		

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SVJB%/L1212K11N	-	-	-	NT-ST010	NT-FT07
NT-SVJB%/L1616K11N	-	-	-	NT-ST040	NT-FT15
NT-SVJB%/L1616H16N	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

VB□1103	page 29	page 50	-	page 80
VB□1604	page 29	page 50	-	page 80

TURNING

THREADING

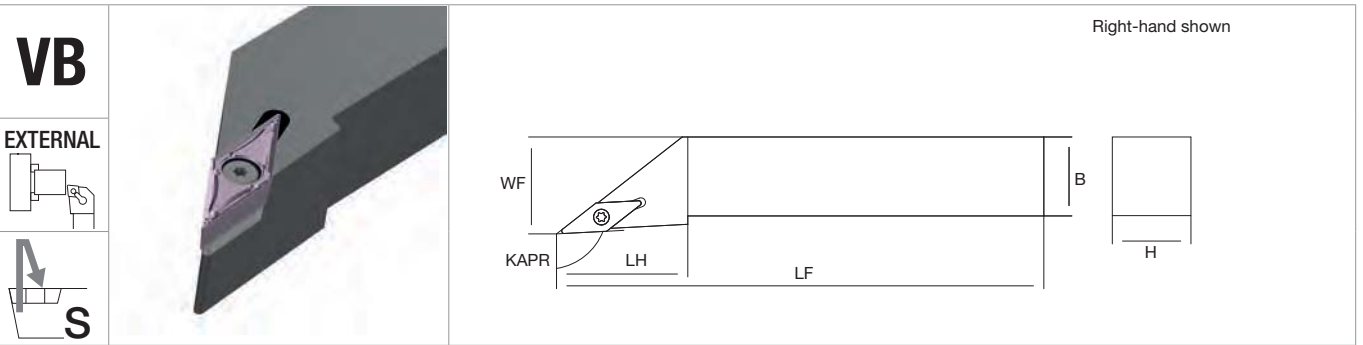
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

		SVJB		H	B	WF	LF	LH	KG	MIID	
		External turning (KAPR 93°)									
		R	L								
11	NT-SVJB®/L2020K11	●	●	20	20	25	125	22		VB□□1103	
	NT-SVJB®/L2020K16	●	●	20	20	25	125	33			
	NT-SVJB®/L2525M16	●	●	25	25	32	150	38		VB□□1604	

● stock standard

GROOVING

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-SVJB®/L2020K11	-	-	-	NT-ST010	NT-FT07
NT-SVJB®/L2020K16	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SVJB®/L2525M16					

MILLING



Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
VB□□1103	page 29	page 50	-	page 80
VB□□1604	page 29	page 50	-	page 80

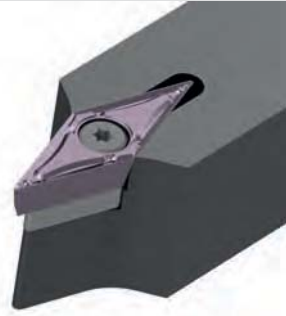
DRILLING

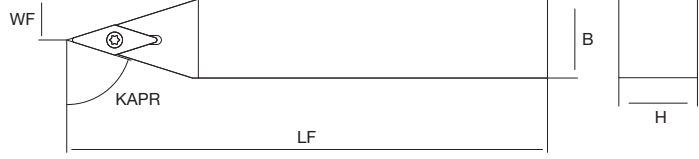
ACCESSORIES

VB

EXTERNAL





SWBN

External turning (KAPR 72.5°)

			H	B	WF	LF	KG	MIID		
--	--	--	---	---	----	----	----	------	--	--

11	NT-SVVBN2020K11	●	20	20	10	125		VB□1103		
	NT-SVVBN2525M11	●	25	25	12.5	150				
16	NT-SVVBN2020K16	●	20	20	10	125		VB□1604		
	NT-SVVBN2525M16	●	25	25	12.5	150				

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-SVVBN2020K11					

NT-SVVBN2020K11	-	-	-	NT-ST010	NT-FT07
NT-SVVBN2525M11	-	-	-		
NT-SVVBN2020K16	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SVVBN2525M16					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

VB□1103	page 29	page 50	-	page 80
VB□1604	page 29	page 50	-	page 80

TURNING

THREADING

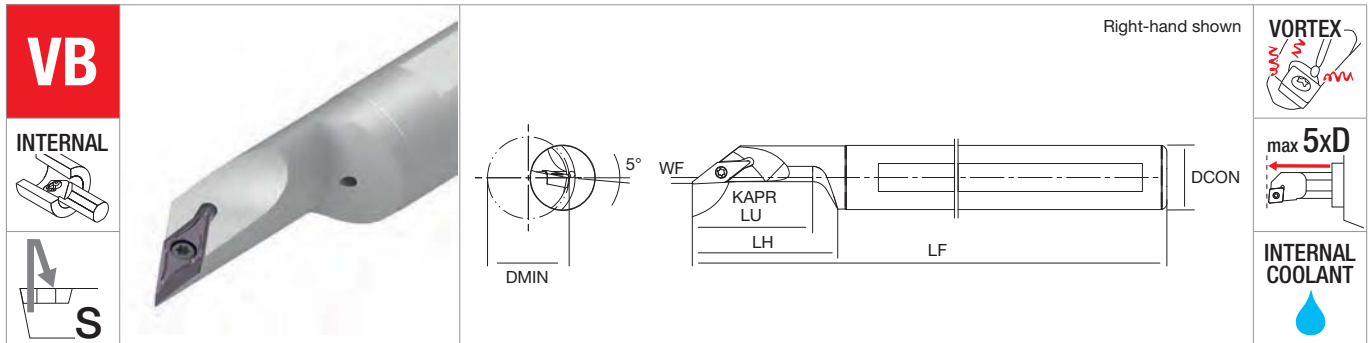
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

V SVJB Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	LH	LU	KG	MIID
				●	●	●	●	●	●		
11	NT-V20R-SVJB [®] /L11-25	●	●	25	20	2	200	48	37.5		VB□□1103
	NT-V25S-SVJB [®] /L11-30	●	●	30	25	3.5	250	58	46		

● stock standard

GROOVING

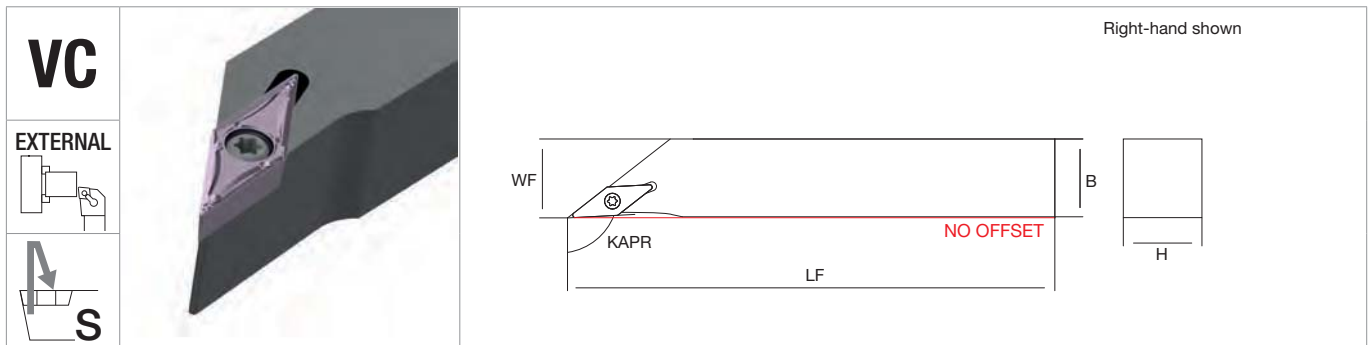
Spare Parts	INSERT SCREW	INSERT WRENCH
	NT-V20R-SVJB [®] /L11-25	NT-ST010
NT-V25S-SVJB [®] /L11-30		

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
	VB□□1103	page 29	page 50	-

DRILLING

ACCESSORIES



SVJC N External turning (KAPR 93°)		R	L	H	B	WF	LF	KG	MIID		
--	--	---	---	---	---	----	----	----	------	--	--

11	NT-SVJC%/L1010K11N	○	○	10	10	10	125		VC□□1103		
	NT-SVJC%/L1212K11N	●	●	12	12	12	125				
	NT-SVJC%/L1616K11N	●	●	16	16	16	125				
16	NT-SVJC%/L1616H16N	●	●	16	16	16	100		VC□□1604		

● stock standard, ○ non-standard stock

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SVJC%/L1010K11N					
NT-SVJC%/L1212K11N	-	-	-	NT-ST010	NT-FT07
NT-SVJC%/L1616K11N					
NT-SVJC%/L1616H16N	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

VC□□1103	page 30	page 51	-	page 81
VC□□1604	page 30	page 51	-	page 81

TURNING

THREADING

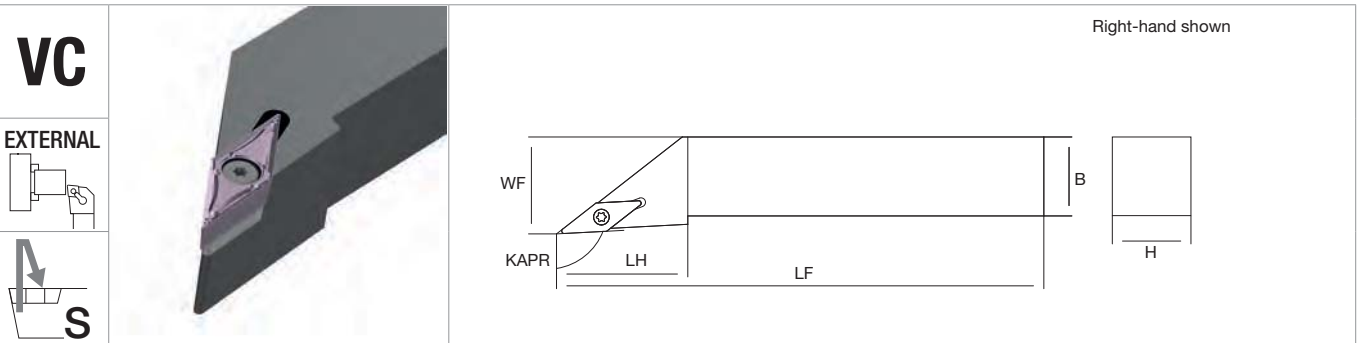
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

		SVJC		H	B	WF	LF	LH	KG	MIID
		External turning (KAPR 93°)								
		R	L							
11	NT-SVJC%/2020K11	●	●	20	20	25	125	22		VC□□1103
	NT-SVJC%/2020K16	●	●	20	20	25	125	33		
	NT-SVJC%/2525M16	●	●	25	25	32	150	38		VC□□1604

● stock standard

GROOVING

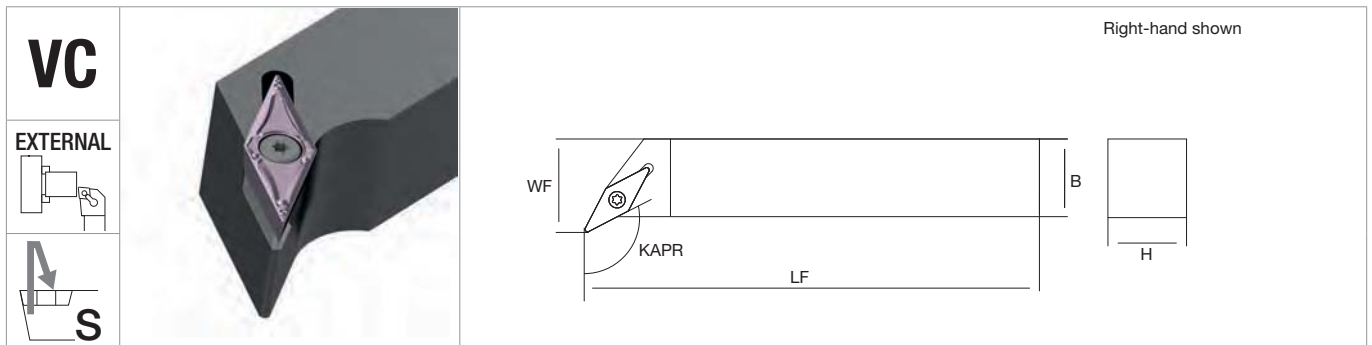
Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-SVJC%/2020K11	-	-	-	NT-ST010	NT-FT07
NT-SVJC%/2020K16	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SVJC%/2525M16					

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
VC□□1103	page 30	page 51	-	page 81
VC□□1604	page 30	page 51	-	page 81

DRILLING

ACCESSORIES



SVPC External turning (KAPR 117.5°)			H	B	WF	LF	KG	MIID		
	R	L								

11	NT-SVPC%/L1010H11	○	○	10	10	14.5	100	VC□□1103		
	NT-SVPC%/L1212H11	●	●	12	12	16.5	100			
	NT-SVPC%/L1616H11	●	●	16	16	20.5	100			
16	NT-SVPC%/L2020K16	●	●	20	20	25	125	VC□□1604		
	NT-SVPC%/L2525M16	●	●	25	25	32	150			

● stock standard, ○ non-standard stock

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SVPC%/L1010H11	-	-	-	NT-ST010	NT-FT07
NT-SVPC%/L1212H11					
NT-SVPC%/L1616H11					
NT-SVPC%/L2020K16	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SVPC%/L2525M16					

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

VC□□1103	page 30	page 51	-	page 81
VC□□1604	page 30	page 51	-	page 81

TURNING

THREADING

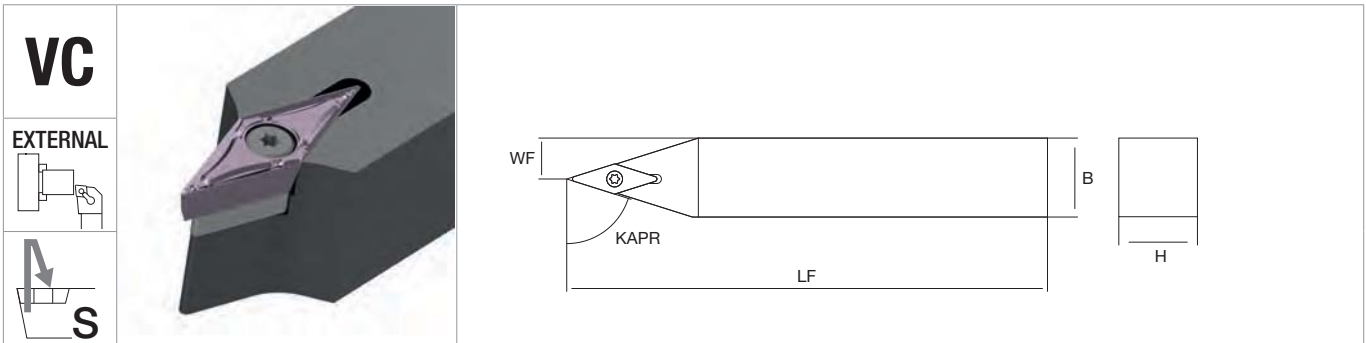
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

VC		EXTERNAL		SWCN		H	B	WF	LF	KG	MIID		
		External turning (KAPR 72.5°)											

11	NT-SVVCN1010H11	○	10	10	5	100		VC□□1103		
	NT-SVVCN1212H11	●	12	12	6	100				
	NT-SVVCN1616H11	●	16	16	8	100				
16	NT-SVVCN2020K16	●	20	20	10	125		VC□□1604		
	NT-SVVCN2525M16	●	25	25	12.5	150				

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	SHIM 	SHIM SCREW 	SHIM WRENCH 	INSERT SCREW 	INSERT WRENCH
-------------	-----------------	-----------------------	------------------------	-------------------------	--------------------------

NT-SVVCN1010H11					
NT-SVVCN1212H11	-	-	-	NT-ST010	NT-FT07
NT-SVVCN1616H11					
NT-SVVCN2020K16	NT-SH050	NT-SR010	NT-WR035	NT-ST040	NT-FT15
NT-SVVCN2525M16					

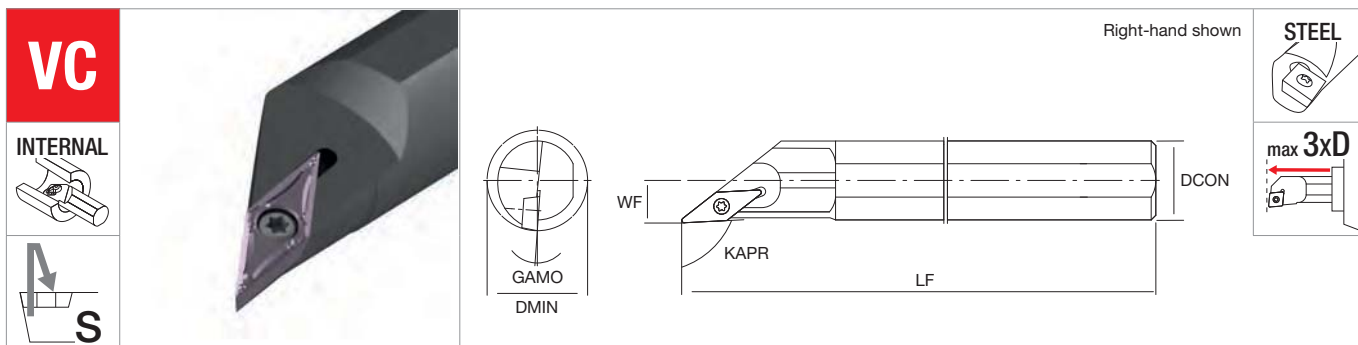
MILLING

Inserts	CARBIDE 	PCBN 	CERAMIC 	DIAMOND
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VC□□1103	page 30	page 51	-	page 81
VC□□1604	page 30	page 51	-	page 81

DRILLING

ACCESSORIES



VC INTERNAL  		S SVJC Internal turning (KAPR 93°)	R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

11	NT-S12M-SVJC%/L11	●	●	14	12	7	150	7°		VC□□1103
	NT-S16Q-SVJC%/L11	●	●	18	16	9	180	7°		
16	NT-S16Q-SVJC%/L16	●	●	18	16	9	180	7°		VC□□1604
	NT-S20R-SVJC%/L16	●	●	21	20	10.5	200	6°		
	NT-S25R-SVJC%/L16	●	●	27	25	13.5	200	6°		
	NT-S32S-SVJC%/L16	●	●	34	32	17	250	4°		
	NT-S40T-SVJC%/L16	○	○	44	40	22	300	4°		

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-S12M-SVJC%/L11	NT-ST010	NT-FT07
NT-S16Q-SVJC%/L11		
NT-S16Q-SVJC%/L16	NT-ST030	NT-FT15
NT-S20R-SVJC%/L16		
NT-S25R-SVJC%/L16		
NT-S32S-SVJC%/L16		
NT-S40T-SVJC%/L16		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
				

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VC□□1604	page 30	page 51	-	page 81

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

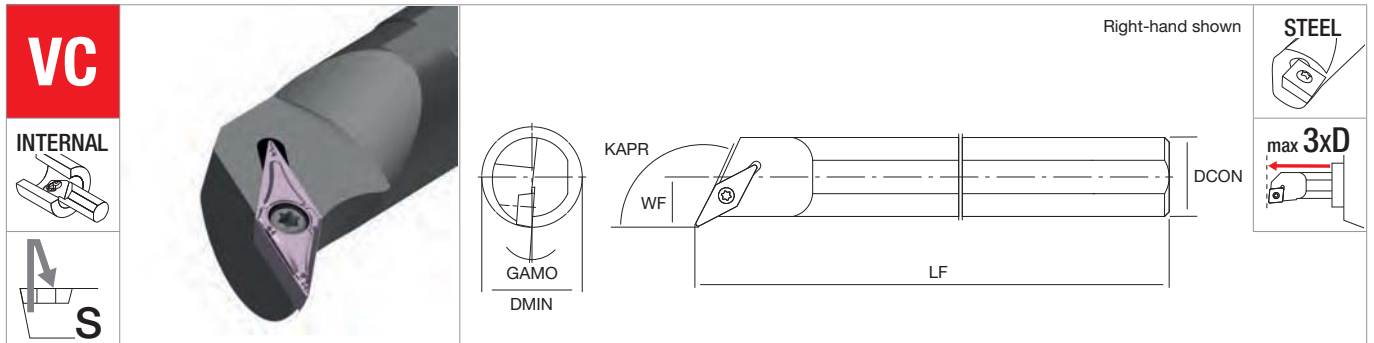
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



S SVQC Internal turning (KAPR 107.5°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

11	NT-S16Q-SVQC%/L11	●	●	22	16	13	180	7°		VC□□1103
	NT-S20R-SVQC%/L11	●	●	27	20	15	200	6°		
16	NT-S20R-SVQC%/L16	●	●	30	20	19	200	8°		VC□□1604
	NT-S25R-SVQC%/L16	●	●	34	25	20.5	200	4°		
	NT-S32S-SVQC%/L16	●	●	41	32	22.5	250	8°		
	NT-S40T-SVQC%/L16	○	○	50	40	27	300	6°		

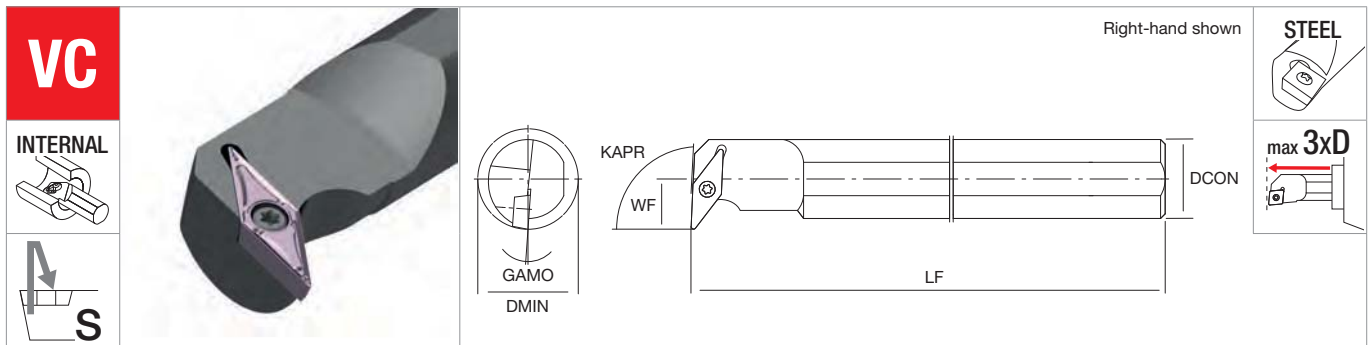
● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S16Q-SVQC%/L11	NT-ST010	NT-FT07
NT-S20R-SVQC%/L11		
NT-S20R-SVQC%/L16	NT-ST030	NT-FT15
NT-S25R-SVQC%/L16		
NT-S32S-SVQC%/L16		
NT-S40T-SVQC%/L16		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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VC□□1604	page 30	page 51	-	page 81



VC		INTERNAL		S		Right-hand shown		STEEL		max 3xD		DCON		LF		GAMO		KG		MIID	
S SVUC				Internal turning (KAPR 93°)				R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID					

11	NT-S16Q-SVUC%/L11	●	●	22	16	13	180	7°		VC□□1103	
	NT-S20R-SVUC%/L11	●	●	27	20	15	200	6°			
16	NT-S20R-SVUC%/L16	●	●	31	20	19	200	8°		VC□□1604	
	NT-S25R-SVUC%/L16	●	●	33	25	20.5	200	7°			
	NT-S32S-SVUC%/L16	●	●	42	32	22.5	250	5°			
	NT-S40T-SVUC%/L16	○	○	51	40	27	300	4°			

● stock standard, ○ non-standard stock

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-S16Q-SVUC%/L11	NT-ST010	NT-FT07
NT-S20R-SVUC%/L11		
NT-S20R-SVUC%/L16	NT-ST030	NT-FT15
NT-S25R-SVUC%/L16		
NT-S32S-SVUC%/L16		
NT-S40T-SVUC%/L16		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

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VC□□1604	page 30	page 51	-	page 81

TURNING

THREADING

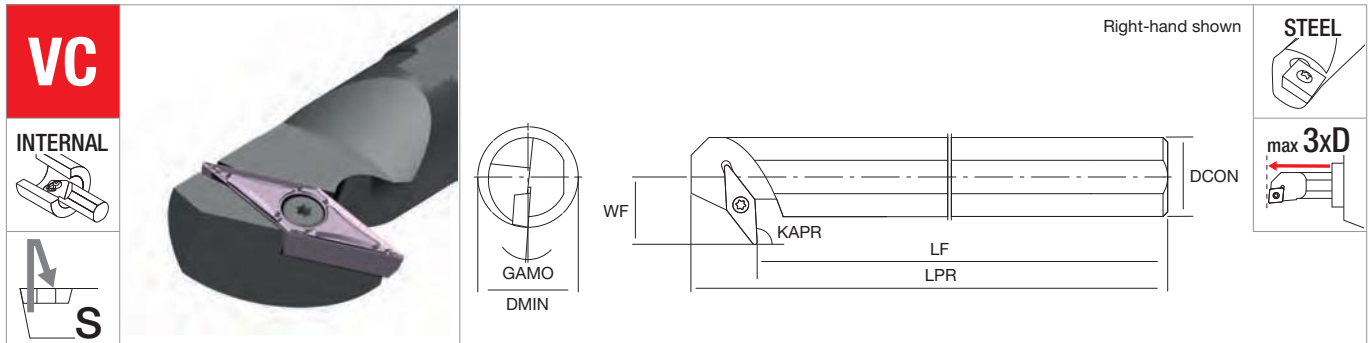
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

		S SVZC		DMIN	DCON	WF	LF	LPR	GAMO		MIID	
		Internal turning (KAPR 93°)										
		R	L									
16	NT-S20R-SVZC [®] /L16	●	●	30	20	17	183	200	7.5°		VC□□1604	
	NT-S25R-SVZC [®] /L16	●	●	35	25	19.5	180	200	7.5°			
	NT-S32S-SVZC [®] /L16	○	○	40	32	23	230	250	7.5°			

● stock standard, ○ non-standard stock

GROOVING

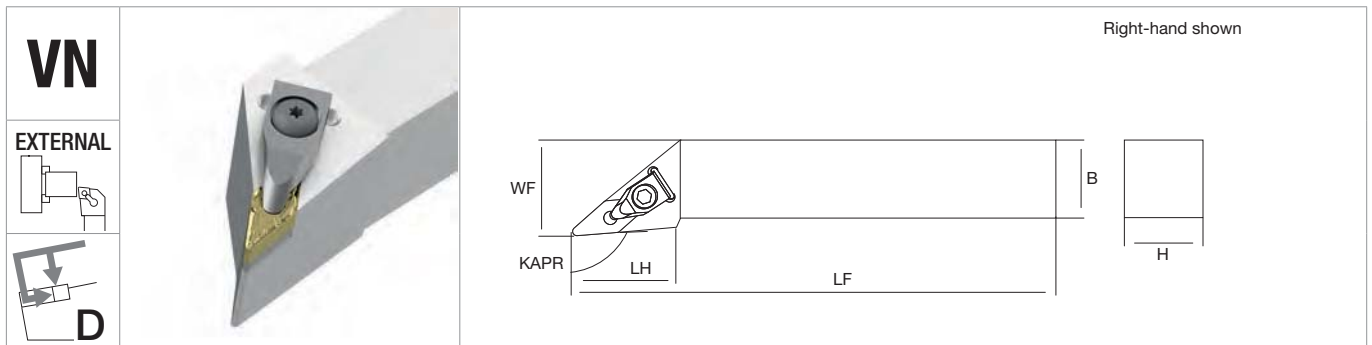
Spare Parts	INSERT SCREW	INSERT WRENCH
	NT-S20R-SVZC [®] /L16	NT-ST030
NT-S25R-SVZC [®] /L16		
NT-S32S-SVZC [®] /L16		

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
	VC□□1604	page 30	page 51	-

DRILLING

ACCESSORIES



VN	EXTERNAL	DVJN External turning (KAPR 93°)	R	L	H	B	WF	LF	LH	KG	MIID

16	NT-DVJN [®] /L2020K16X	●	●	20	20	25	125	50		VN□□1604
	NT-DVJN [®] /L2525M16X	●	●	25	25	32	150	46		

● stock standard



NT-DVJN [®] /L2020K16X	NT-SH075	NT-ST250	NT-TX15	NT-CS210	NT-SG200	NT-SC200	NT-TX20
NT-DVJN [®] /L2525M16X							



VN□□1604	page 31	page 52	page 67	-
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TURNING

THREADING

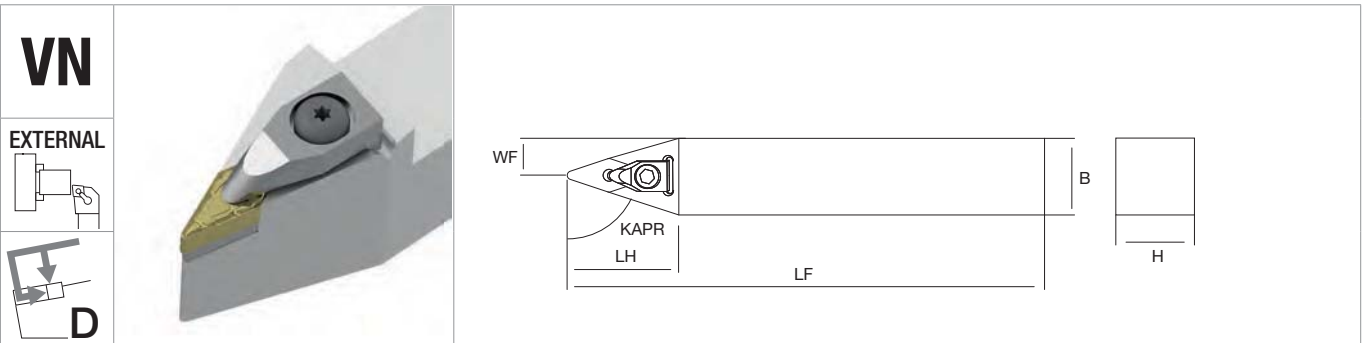
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

VN		DVNN External turning (KAPR 72.5°)		H	B	WF	LF	LH	KG	MIID
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16	NT-DVVNN2020K16X	●	20	20	10	125	47		VN□□1604
	NT-DVVNN2525M16X	●	25	25	12.5	150	47		

● stock standard

GROOVING

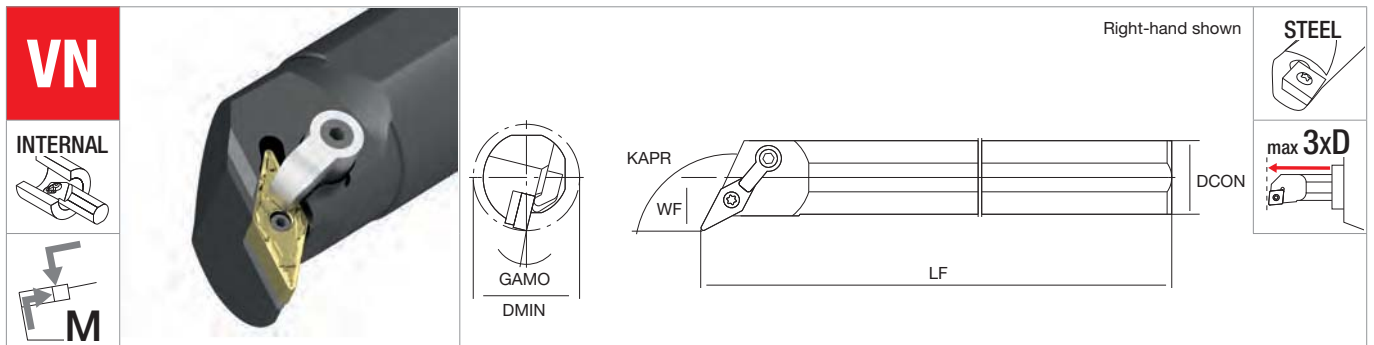
Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	CLAMP	SPRING	CLAMP SCREW	CLAMP WRENCH
NT-DVVNN2020K16X	NT-SH075	NT-ST250	NT-TX15	NT-CS210	NT-SG200	NT-SC200	NT-TX20
NT-DVVNN2525M16X							

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
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DRILLING

ACCESSORIES



S MVQN Internal turning (KAPR 107.5°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

16	NT-S25R-MVQN [®] /L16	●	●	33	25	20	200	12°	VN□1604
	NT-S32S-MVQN [®] /L16	●	●	40	32	23	250	17°	
	NT-S40T-MVQN [®] /L16	●	●	50	40	27	300	15°	
	NT-S50U-MVQN [®] /L16	●	●	63	50	33	350	12°	

● stock standard, ○ non-standard stock

Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH

NT-S25R-MVQN [®] /L16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MVQN [®] /L16					NT-SC010	
NT-S40T-MVQN [®] /L16						
NT-S50U-MVQN [®] /L16						

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

VN□1604	page 31	page 52	page 67	-
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TURNING

THREADING

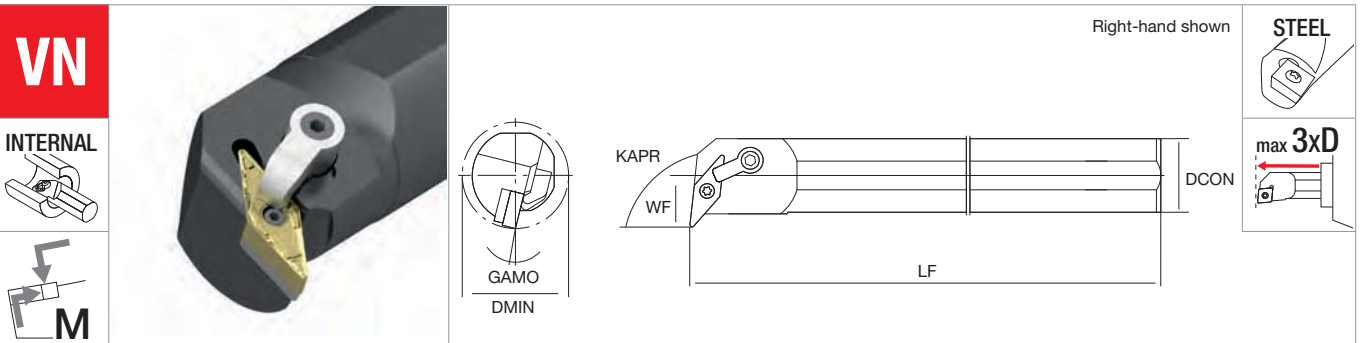
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

S MVUN Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

16	NT-S25R-MVUN®/L16	● ●	37	25	20	200	12°		VN□1604
	NT-S32S-MVUN®/L16	● ●	40	32	22	250	12°		
	NT-S40T-MVUN®/L16	● ●	50	40	27	300	15°		
	NT-S50U-MVUN®/L16	○ ○	63	50	32	350	12°		

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH

NT-S25R-MVUN®/L16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MVUN®/L16					NT-SC010	
NT-S40T-MVUN®/L16						
NT-S50U-MVUN®/L16						

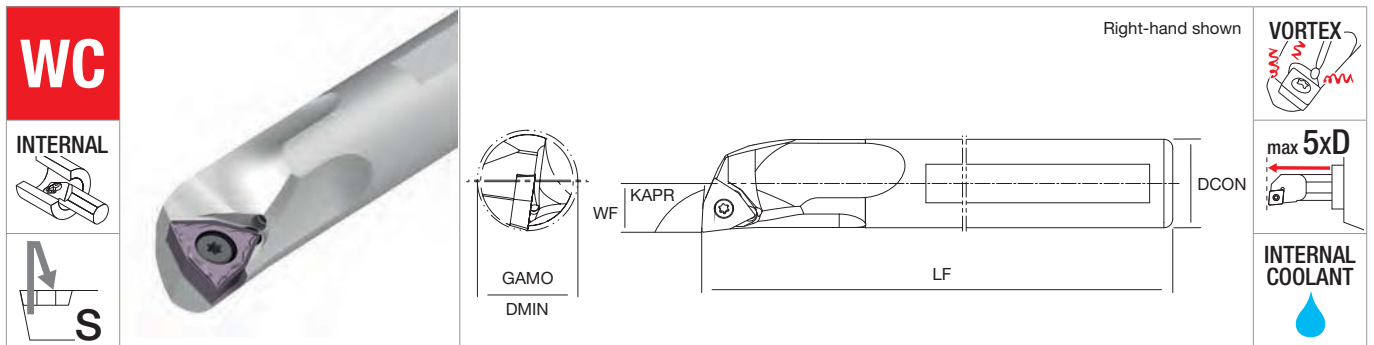
MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

VN□1604	page 31	page 52	page 67	-
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DRILLING

ACCESSORIES



V SWUC Internal turning (KAPR 93°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

12	NT-V12M-SWUC%/L12-14	●	●	14	12	7	150	13°	WC□□12T3
	NT-V16Q-SWUC%/L12-18	●	●	18	16	9	180	10°	
	NT-V20R-SWUC%/L12-22	●	●	22	20	11	200	8°	
	NT-V25S-SWUC%/L12-27	●	●	27	25	13.5	250	8°	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-V12M-SWUC%/L12-14	NT-ST020	NT-FT15
NT-V16Q-SWUC%/L12-18		
NT-V20R-SWUC%/L12-22		
NT-V25S-SWUC%/L12-27		

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

WC□□12T3	page 33	-	-	-
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TURNING

THREADING

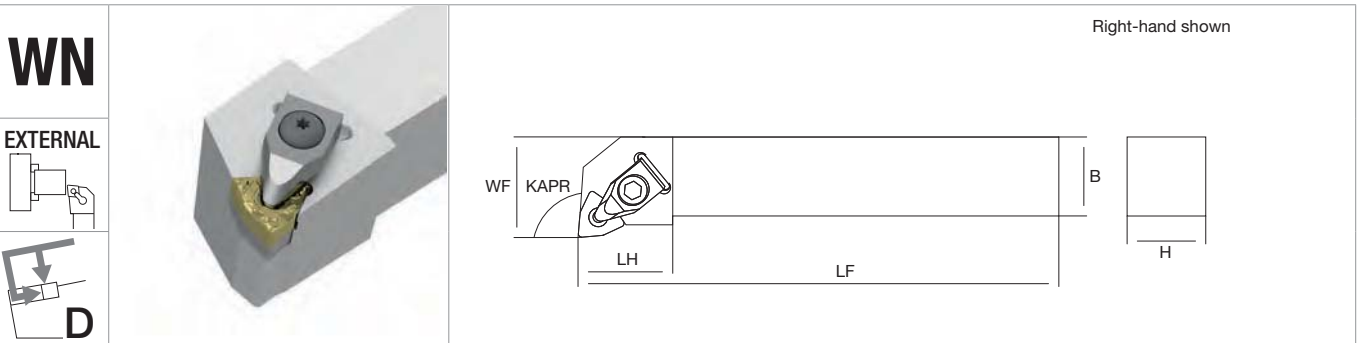
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

WN	EXTERNAL		D	DWLN	External turning (KAPR 95°)	H	B	WF	LF	LH		MIID	
	R					L							

06	NT-DWLN®/.1616H06X	●	●	16	16	20	100	33		WN□□0604	
	NT-DWLN®/.2020K06X	●	●	20	20	25	125	33			
	NT-DWLN®/.2525M06X	●	●	25	25	32	150	33			
08	NT-DWLN®/.2020K08X	●	●	20	20	25	125	40		WN□□0804	
	NT-DWLN®/.2525M08X	●	●	25	25	32	150	40			
	NT-DWLN®/.3225P08X	●	●	32	25	32	170	40			

● stock standard

GROOVING



NT-DWLN®/.1616H06X	NT-SH003	NT-ST250	NT-TX15	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DWLN®/.2020K06X							
NT-DWLN®/.2525M06X							
NT-DWLN®/.2020K08X	NT-SH010	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-DWLN®/.2525M08X							
NT-DWLN®/.3225P08X							

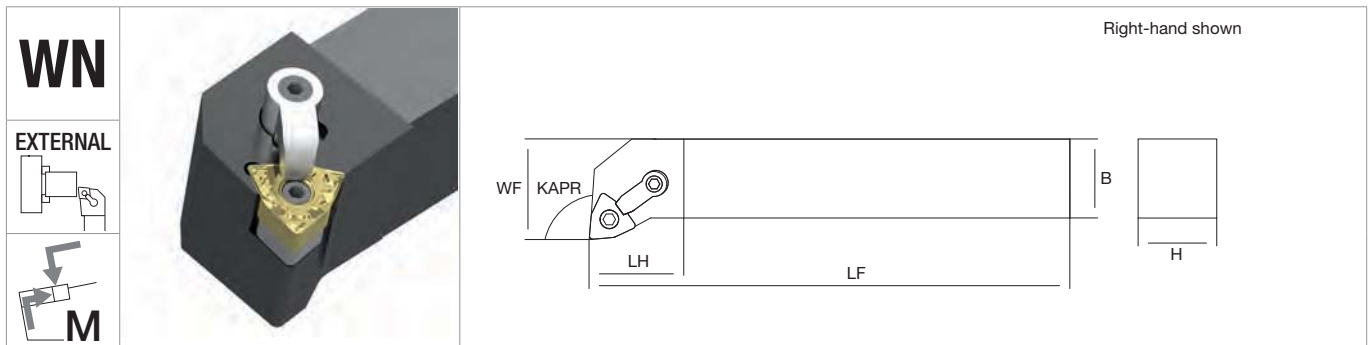
MILLING



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WN□□0804	page 34	page 53	page 68	page 83

DRILLING

ACCESSORIES



WN	EXTERNAL					Right-hand shown						MIID	

MWLN External turning (KAPR 95°)		R	L	H	B	WF	LF	LH		MIID	
06	NT-MWLN [®] /2020K06	○	○	20	20	25	125	34		WN□□0604	
	NT-MWLN [®] /2525M06	○	○	25	25	32	150	34			
08	NT-MWLN [®] /2020K08	●	●	20	20	25	125	34		WN□□0804	
	NT-MWLN [®] /2525M08	●	●	25	25	32	150	34			
	NT-MWLN [®] /3232P08	●	●	32	32	40	170	40			

● stock standard, ○ non-standard stock

Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH
NT-MWLN [®] /2020K06	NT-SH003	NT-SP020	NT-WR020	NT-CS009	NT-SC030	NT-WR025
NT-MWLN [®] /2525M06						
NT-MWLN [®] /2020K08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-MWLN [®] /2525M08						
NT-MWLN [®] /3232P08						

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
WN□□0604	page 34	-	-	-
WN□□0804	page 34	page 53	page 68	page 83

TURNING

THREADING

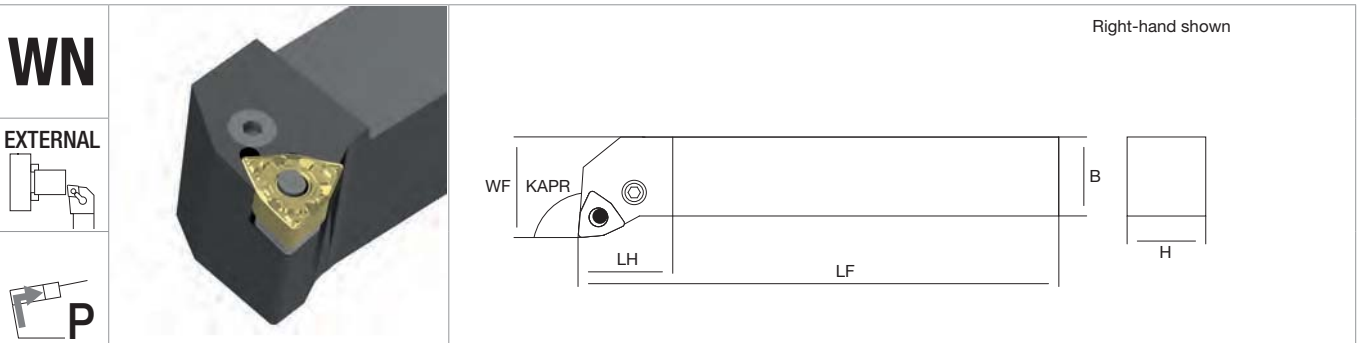
GROOVING

MILLING

DRILLING

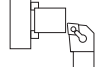
ACCESSORIES

TURNING



WN

EXTERNAL



PWLN
External turning (KAPR 95°)

R L

H B WF LF LH MIID

08	NT-PWLN [®] /L2020K08	●	●	20	20	25	125	20		WN□□0804
	NT-PWLN [®] /L2525M08	●	●	25	25	32	150	26		

● stock standard

THREADING

GROOVING

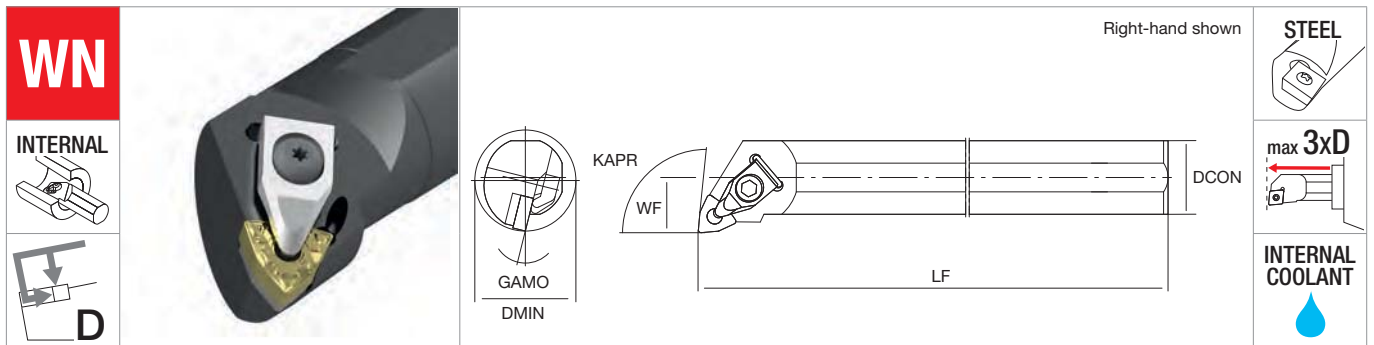
Spare Parts	SHIM	PLUG	LEVER	LEVER SCREW	WRENCH
NT-PWLN [®] /L2020K08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-PWLN [®] /L2525M08					

MILLING

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND
WN□□0804	page 34	page 53	page 68	page 83

DRILLING

ACCESSORIES



WN	INTERNAL	D	A DWLN Internal turning (KAPR 95°)	R	L	DMIN	DCON	WF	LF	GAMO		MIID	

08	NT-A25R-DWLN [®] /L08	● ●	32	25	17	200	14°					
	NT-A32S-DWLN [®] /L08	● ●	40	32	22	250	14°			WN□□0804		
	NT-A40T-DWLN [®] /L08	● ●	50	40	27	300	12°					

● stock standard



NT-A25R-DWLN [®] /L08	NT-SH015	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20
NT-A32S-DWLN [®] /L08							
NT-A40T-DWLN [®] /L08							



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TURNING

THREADING

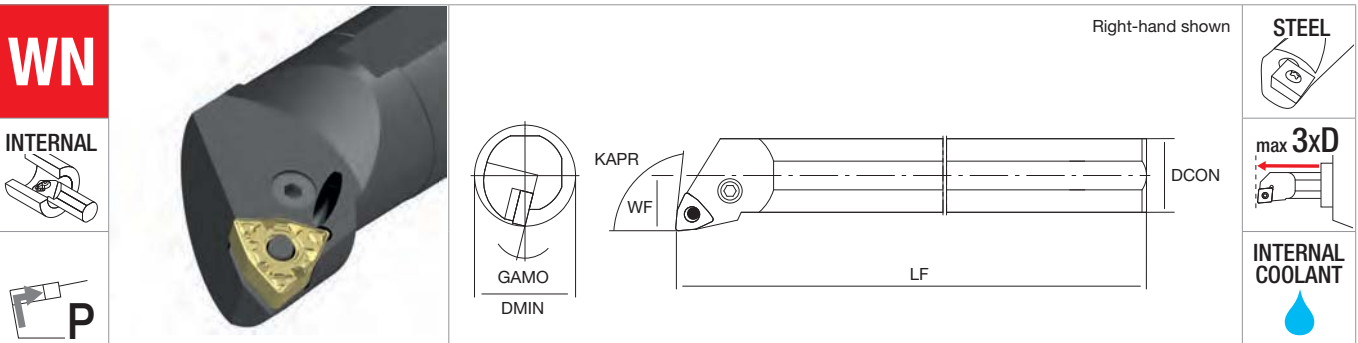
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



THREADING

A PWLN Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

08	NT-A25R-PWLN [®] /08	●	●	30	25	17	200	12°		
	NT-A32S-PWLN [®] /08	●	●	40	32	22	250	10°		WN□□0804
	NT-A40T-PWLN [®] /08	●	●	48	40	27	300	8°		

● stock standard

GROOVING



NT-A25R-PWLN [®] /08	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PWLN [®] /08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PWLN [®] /08					

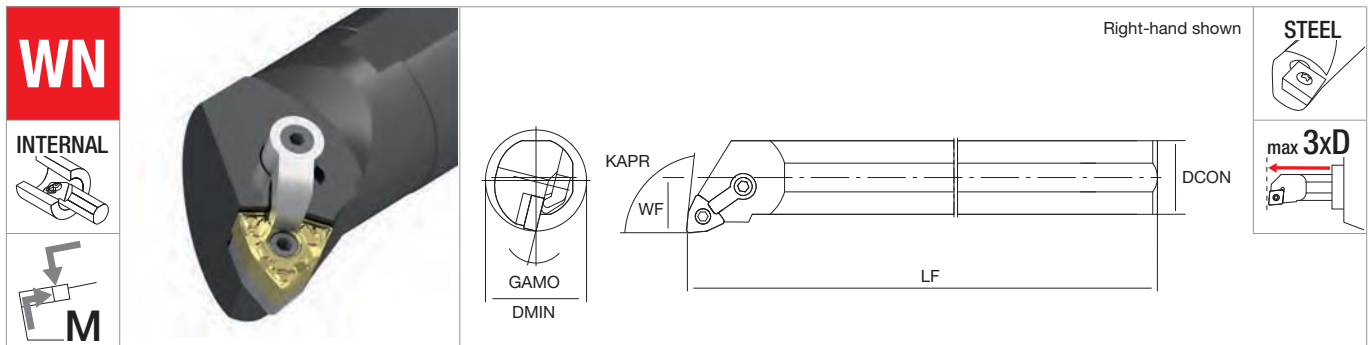
MILLING



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DRILLING

ACCESSORIES



S MWLN Internal turning (KAPR 95°)		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID

		R	L	DMIN	DCON	WF	LF	GAMO	KG	MIID
06	NT-S16Q-MWLN%/06	○	○	22	16	11	180	18°		WN□□0604
	NT-S20R-MWLN%/08	●	●	25	20	13	200	17°		WN□□0804
08	NT-S25R-MWLN%/08	●	●	32	25	17	200	14°		
	NT-S32S-MWLN%/08	●	●	40	32	22	250	14°		
	NT-S40T-MWLN%/08	●	●	50	40	27	300	12°		
	NT-S50U-MWLN%/08	●	●	63	50	35	350	12°		

● stock standard, ○ non-standard stock

Spare Parts	SHIM	ECCENTRIC PIN	PIN WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH

NT-S16Q-MWLN%/06	-	NT-SP030	NT-WR020	NT-CS030	NT-SC030	NT-WR025
NT-S20R-MWLN%/08	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MWLN%/08					NT-SC008	NT-WR030
NT-S32S-MWLN%/08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	
NT-S40T-MWLN%/08						
NT-S50U-MWLN%/08						

Inserts	CARBIDE	PCBN	CERAMIC	DIAMOND

WN□□0604	page 34	-	-	-
WN□□0804	page 34	page 53	page 68	page 83

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



THREADING

Carbide .175
Advanced .181
Holders .185



THREADING Carbide

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TPM	CARBIDE				ISO513	HC-PVD														
	Size	IC	S	D1			JPS125													
<p>3 edges</p>	16	9.525	3.65	4.00	P	80 180														
					M	60 140														
					K	50 120														
					N															
					S	20 40														
					H															
GRADE APPLICATION AREA	Stable machining, continuous cut				+															
main application	General machining, light interruption				-															
applicable	Unstable machining, interrupted cut				-															
FULL PROFILE	<p>METRIC 60°</p>	16ER	100ISO-TPM	RE 0.14	pitch: 1.00 mm no. of passes 5÷8	●														
			125ISO-TPM	RE 0.18	pitch: 1.25 mm no. of passes 6÷9	●														
			150ISO-TPM	RE 0.22	pitch: 1.50 mm no. of passes 6÷9	●														
			175ISO-TPM	RE 0.25	pitch: 1.75 mm no. of passes 8÷11	●														
			200ISO-TPM	RE 0.29	pitch: 2.00 mm no. of passes 8÷11	●														
			250ISO-TPM	RE 0.36	pitch: 2.50 mm no. of passes 10÷13	●														
			300ISO-TPM	RE 0.43	pitch: 3.00 mm no. of passes 12÷15	●														
	<p>UNIFIED 60°</p>	16ER	24UN-TPM	RE 0.15	pitch: 24 TPI no. of passes 5÷8	●														
			20UN-TPM	RE 0.18	pitch: 20 TPI no. of passes 6÷9	●														
			18UN-TPM	RE 0.20	pitch: 18 TPI no. of passes 6÷9	●														
			16UN-TPM	RE 0.23	pitch: 16 TPI no. of passes 7÷10	●														
			14UN-TPM	RE 0.26	pitch: 14 TPI no. of passes 8÷11	●														
			12UN-TPM	RE 0.31	pitch: 12 TPI no. of passes 8÷11	●														
			08UN-TPM	RE 0.46	pitch: 8 TPI no. of passes 12÷15	●														
		<p>NATIONAL PIPE TAPERED 60°</p>	16ER	18NPT-TPM	RE 0.20	pitch: 18 TPI no. of passes 8÷11	●													
			14NPT-TPM	RE 0.22	pitch: 14 TPI no. of passes 10÷13	●														
			11.5NPT-TPM	RE 0.25	pitch: 11.5 TPI no. of passes 12÷15	●														
	<p>WHITWORTH 55°</p>	16ER	19W-TPM	RE 0.17	pitch: 19 TPI no. of passes 6÷9	●														
			14W-TPM	RE 0.24	pitch: 14 TPI no. of passes 8÷11	●														
			11W-TPM	RE 0.30	pitch: 11 TPI no. of passes 9÷12	●														
	<p>BRITISH STANDARD PIPE TAPERED 55°</p>	16ER	28BSPT-TPM	RE 0.11	pitch: 28 TPI no. of passes 5÷8	●														
			19BSPT-TPM	RE 0.17	pitch: 19 TPI no. of passes 6÷9	●														
			14BSPT-TPM	RE 0.24	pitch: 14 TPI no. of passes 9÷12	●														
			11BSPT-TPM	RE 0.30	pitch: 11 TPI no. of passes 12÷15	●														

● stock standard

TPM		CARBIDE External threading				ISO513	HC-PVD													
							JPS125													
<p>RE IC D1 S 3 edges</p>	Size	IC	S	D1	P	80 180														
	16	9.525	3.65	4.00	M	60 140														
					K	50 120														
					N															
					S	20 40														
					H															
GRADE APPLICATION AREA		Stable machining, continuous cut			+ Hardness - Toughness +															
main application		General machining, light interruption																		
applicable		Unstable machining, interrupted cut																		
PARTIAL PROFILE	60° P M K S	<p>METRIC AND UNIFIED THREADS</p>	16ER	A60-TPM	RE 0.08	pitch: 0.50÷1.50 mm, 48÷16 TPI	●													
			G60-TPM	RE 0.25	pitch: 1.75÷3.00 mm, 14÷8 TPI	●														
			AG60-TPM	RE 0.08	pitch: 0.50÷3.00 mm, 48÷8 TPI	●														
	55° P M K S	<p>WHITWORTH AND GAS THREADS</p>	16ER	A55-TPM	RE 0.08	pitch: 48÷16 TPI	●													
			G55-TPM	RE 0.21	pitch: 14÷8 TPI	●														
			AG55-TPM	RE 0.08	pitch: 48÷8 TPI	●														

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

TPM	CARBIDE Internal threading				ISO513	HC-PVD										
	Size	IC	S	D1	P	JPS125										
<p>3 edges</p>	11	6.35	3.18	3.20	M	80 180										
	16	9.525	3.65	4.00	K	60 140 50 120										
					N											
					S	20 40										
					H											
GRADE APPLICATION AREA	Stable machining, continuous cut				+											
main application	General machining, light interruption				-											
applicable	Unstable machining, interrupted cut															
<p>METRIC 60°</p>	11IR	100ISO-TPM	RE 0.07	pitch: 1.00 mm no. of passes 5÷8	●											
		125ISO-TPM	RE 0.09	pitch: 1.25 mm no. of passes 6÷9	●											
		150ISO-TPM	RE 0.11	pitch: 1.50 mm no. of passes 6÷9	●											
		175ISO-TPM	RE 0.13	pitch: 1.75 mm no. of passes 8÷11	●											
		200ISO-TPM	RE 0.15	pitch: 2.00 mm no. of passes 8÷11	●											
	16IR	100ISO-TPM	RE 0.07	pitch: 1.00 mm no. of passes 5÷8	●											
		125ISO-TPM	RE 0.09	pitch: 1.25 mm no. of passes 6÷9	●											
		150ISO-TPM	RE 0.11	pitch: 1.50 mm no. of passes 6÷9	●											
		175ISO-TPM	RE 0.13	pitch: 1.75 mm no. of passes 8÷11	●											
		200ISO-TPM	RE 0.15	pitch: 2.00 mm no. of passes 8÷11	●											
	UN	24UN-TPM	RE 0.08	pitch: 24 TPI no. of passes 5÷8	●											
		20UN-TPM	RE 0.09	pitch: 20 TPI no. of passes 6÷9	●											
		18UN-TPM	RE 0.10	pitch: 18 TPI no. of passes 6÷9	●											
		16UN-TPM	RE 0.12	pitch: 16 TPI no. of passes 7÷10	●											
		14UN-TPM	RE 0.13	pitch: 14 TPI no. of passes 8÷11	●											
08UN-TPM	12UN-TPM	RE 0.16	pitch: 12 TPI no. of passes 8÷11	●												
	08UN-TPM	RE 0.23	pitch: 8 TPI no. of passes 12÷15	●												
	300ISO-TPM	RE 0.22	pitch: 3.00 mm no. of passes 12÷15	●												
<p>NATIONAL PIPE TAPERED 60°</p>	16IR	18NPT-TPM	RE 0.20	pitch: 18 TPI no. of passes 8÷11	●											
		14NPT-TPM	RE 0.22	pitch: 14 TPI no. of passes 10÷13	●											
		11.5NPT-TPM	RE 0.25	pitch: 11.5 TPI no. of passes 12÷15	●											
<p>WHITWORTH 55°</p>	16IR	19W-TPM	RE 0.17	pitch: 19 TPI no. of passes 6÷9	●											
		14W-TPM	RE 0.24	pitch: 14 TPI no. of passes 8÷11	●											
		11W-TPM	RE 0.30	pitch: 11 TPI no. of passes 9÷12	●											

● stock standard

TPM		CARBIDE Internal threading				ISO513	HC-PVD																			
		Size	IC	S	D1		JPS125																			
<p>3 edges</p>						P	80 180																			
		11	6.35	3.18	3.20		M	60 140																		
		16	9.525	3.65	4.00		K	50 120																		
							N																			
							S	20 40																		
							H																			
GRADE APPLICATION AREA		Stable machining, continuous cut																								
■ main application		General machining, light interruption																								
■ applicable		Unstable machining, interrupted cut																								
FULL PROFILE	<p>BRITISH STANDARD PIPE TAPERED 55°</p>	16IR	28BSPT-TPM	RE 0.11	pitch: 28 TPI no. of passes 5÷8	●																				
			19BSPT-TPM	RE 0.17	pitch: 19 TPI no. of passes 6÷9	●																				
			14BSPT-TPM	RE 0.24	pitch: 14 TPI no. of passes 9÷12	●																				
			11BSPT-TPM	RE 0.30	pitch: 11 TPI no. of passes 12÷15	●																				
		60° P M K S	11IR	A60-TPM	RE 0.08	pitch: 0.50÷1.50 mm, 48÷16 TPI	●																			
PARTIAL PROFILE	<p>METRIC AND UNIFIED THREADS</p>	16IR	A60-TPM	RE 0.08	pitch: 0.50÷1.50 mm, 48÷16 TPI	●																				
			G60-TPM	RE 0.13	pitch: 1.75÷3.00 mm, 14÷8 TPI	●																				
			AG60-TPM	RE 0.08	pitch: 0.50÷3.00 mm, 48÷8 TPI	●																				
			55° P M K S	11IR	A55-TPM	RE 0.08	pitch: 48÷16 TPI	●																		
		16IR	A55-TPM	RE 0.08	pitch: 48÷16 TPI	●																				
			G55-TPM	RE 0.21	pitch: 14÷8 TPI	●																				
			AG55-TPM	RE 0.08	pitch: 48÷8 TPI	●																				

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



THREADING Advanced

TURNING

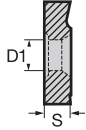
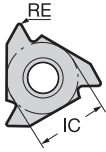
16ER

DIAMOND-PCBN External threading

ISO513

DP
BH

ND120
NBH4500



1 edge

Size	IC	S	D1	ISO513	DP	BH
16	9.525	3.65	4.00	P	140	◀ SINTERED POWDER METAL
				M	300	
				K	400	
				N	1200	
				S	500	
				H	2000	
					60	
					160	

THREADING

GRADE APPLICATION AREA

Stable machining, continuous cut

main application

General machining, light interruption

applicable

Unstable machining, interrupted cut



GROOVING

FULL PROFILE

METRIC N H



16ER	100ISO	N	pitch: 1.00 mm no. of passes 5÷8	○	
		H	pitch: 1.00 mm no. of passes 7÷10	○	
125ISO	125ISO	N	pitch: 1.25 mm no. of passes 6÷9	○	
		H	pitch: 1.25 mm no. of passes 8÷11	○	
150ISO	150ISO	N	pitch: 1.50 mm no. of passes 6÷9	○	
		H	pitch: 1.50 mm no. of passes 8÷11	○	
175ISO	175ISO	N	pitch: 1.75 mm no. of passes 8÷11	○	
		H	pitch: 1.75 mm no. of passes 10÷13	○	
200ISO	200ISO	N	pitch: 2.00 mm no. of passes 8÷11	○	
		H	pitch: 2.00 mm no. of passes 10÷13	○	
250ISO	250ISO	N	pitch: 2.50 mm no. of passes 10÷13	○	
		H	pitch: 2.50 mm no. of passes 13÷15	○	
300ISO	300ISO	N	pitch: 3.00 mm no. of passes 12÷15	○	
		H	pitch: 3.00 mm no. of passes 14÷17	○	

○ non-standard stock

MILLING

DRILLING

ACCESSORIES

16IR		DIAMOND-PCBN Internal threading				ISO513	DP	BH										
		Size	IC	S	D1		ND120	NBH450U	◀ SINTERED POWDER METAL									
		16	9.525	3.65	4.00	P	140	300										
						M	400	1200										
						K	500	2000										
						N												
						S												
						H	60	160										
GRADE APPLICATION AREA		Stable machining, continuous cut				+												
main application		General machining, light interruption				-												
applicable		Unstable machining, interrupted cut				+												
FULL PROFILE	METRIC N H		16IR	100ISO	N	pitch: 1.00 mm no. of passes 5÷8	○											
	H	pitch: 1.00 mm no. of passes 7÷10				○												
	125ISO	N		pitch: 1.25 mm no. of passes 6÷9	○													
		H		pitch: 1.25 mm no. of passes 8÷11		○												
	150ISO	N		pitch: 1.50 mm no. of passes 6÷9	○													
		H		pitch: 1.50 mm no. of passes 8÷11		○												
	175ISO	N		pitch: 1.75 mm no. of passes 8÷11	○													
		H		pitch: 1.75 mm no. of passes 10÷13		○												
	200ISO	N		pitch: 2.00 mm no. of passes 8÷11	○													
		H		pitch: 2.00 mm no. of passes 10÷13		○												
	250ISO	N		pitch: 2.50 mm no. of passes 10÷13	○													
		H		pitch: 2.50 mm no. of passes 13÷15		○												
	300ISO	N		pitch: 3.00 mm no. of passes 12÷15	○													
		H		pitch: 3.00 mm no. of passes 14÷17		○												

○ non-standard stock

TURNING

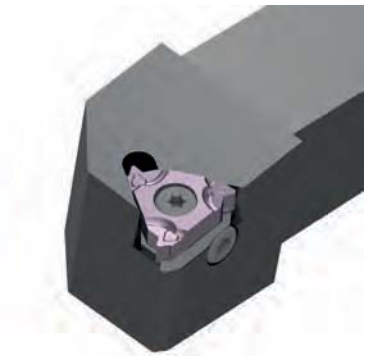
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

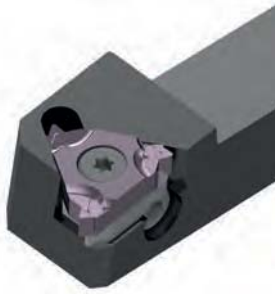
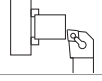


THREADING Holders

TURNING

16E

EXTERNAL



Right-hand shown



THREADING

SE N

External threading

R L

H

B

WF

LF



MIID

16	NT-SE [®] /1212H16N	●	○	12	12	12	100	16E [®] /□□□□		
	NT-SE [®] /1616H16N	○	○	16	16	16	100			

● stock standard, ○ non-standard stock

GROOVING

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SER1212H16N	NT-SH060	NT-ST080	NT-WR025	NT-ST040	NT-FT15
NT-SER1616H16N					
NT-SEL1212H16N	NT-SH065	NT-ST080	NT-WR025	NT-ST040	NT-FT15
NT-SEL1616H16N					

MILLING

DRILLING

ACCESSORIES

16E

Right-hand shown

EXTERNAL

SE												
External threading			H	B	WF	LF	LH		MIID			
	R	L										

16	NT-SE ^R /1616H16	●	●	16	16	20	100	22				
	NT-SE ^R /2020K16	●	●	20	20	25	125	25		16E ^R /□□□□		
	NT-SE ^R /2525M16	●	●	32	25	32	150	25				

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

NT-SER1616H16	NT-SH060	NT-ST080	NT-WR025	NT-ST040	NT-FT15
NT-SER2020K16					
NT-SER2525M16					
NT-SEL1616H16	NT-SH065	NT-ST080	NT-WR025	NT-ST040	NT-FT15
NT-SEL2020K16					
NT-SEL2525M16					

TURNING

THREADING

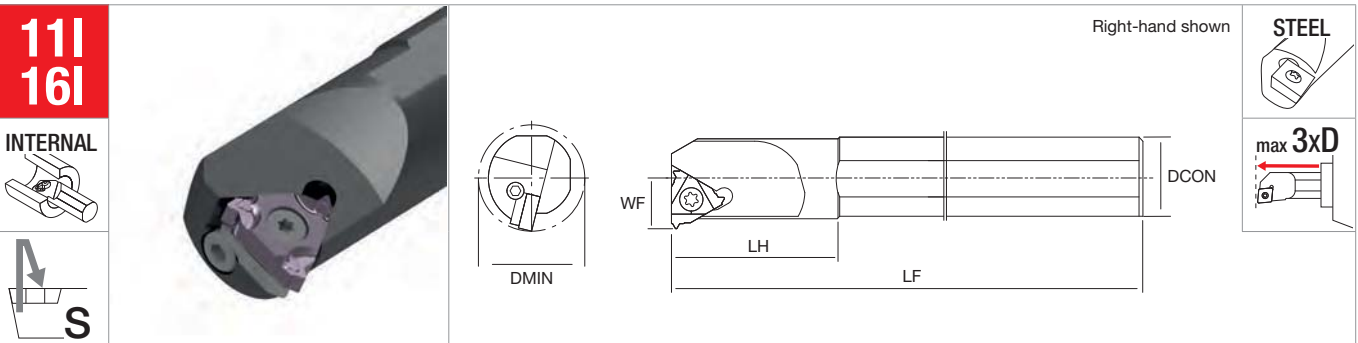
GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING



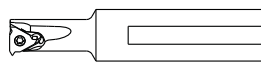
THREADING

SI Internal threading									
	R	L	DMIN	DCON	WF	LF	LH		MIID

11	NT-SIR1012-11	●	●	10	12	5.2	150	25	11IR□□□
	NT-SIR1216-11*	●	●	12	16	6.3	150	25	
	NT-SIR1516-11*	●	●	15	16	7.5	150	25	
16	NT-SI [®] /Λ2016-16	●	●	20	16	10	150	35	16P/Λ□□□
	NT-SI [®] /Λ2420S-16	●	●	24	20	12	180	35	
	NT-SI [®] /Λ3025S-16	●	●	30	25	15	200	35	
	NT-SI [®] /Λ3732S-16	●	●	37	32	18.5	250	35	

● stock standard

*Reduced neck



GROOVING

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH

MILLING



NT-SIR1012-11					
NT-SIR1216-11	-	-	-	NT-ST041	NT-FT08
NT-SIR1516-11					
NT-SIR2016-16	-	-	-	NT-ST030	NT-FT15
NT-SIR2420S-16	NT-SH065	NT-ST080	NT-WR025	NT-ST040	
NT-SIR3025S-16					
NT-SIR3732S-16					
NT-SIL2016-16	-	-	-	NT-ST030	NT-FT15
NT-SIL2420S-16	NT-SH060	NT-ST080	NT-WR025	NT-ST040	
NT-SIL3025S-16					
NT-SIL3732S-16					


DRILLING

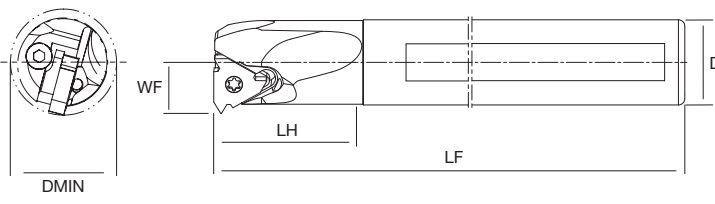
ACCESSORIES

11
16l


INTERNAL

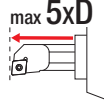





Right-hand shown



max 5xD



INTERNAL COOLANT



V SIR
Internal threading

			DMIN	DCON	WF	LF	LH	KG	MIID
--	--	--	------	------	----	----	----	----	------

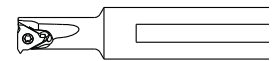
11	NT-V10M-SIR11-10	●	10	10	5.2	150	25		11R□□□
	NT-V16M-SIR11-12*	●	12	16	6.3	150	25		
	NT-V16M-SIR11-15*	●	15	16	7.5	150	25		
16	NT-V16M-SIR16-20	●	20	16	10	150	35		16R□□□
	NT-V20Q-SIR16-24	●	24	20	12	180	35		
	NT-V25R-SIR16-30	●	30	25	15	200	35		
	NT-V32S-SIR16-37	●	37	32	18.5	250	35		

● stock standard

*Reduced neck

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-V10M-SIR11-10					

NT-V10M-SIR11-10	-	-	-	NT-ST041	NT-FT08
NT-V16M-SIR11-12					
NT-V16M-SIR11-15					
NT-V16M-SIR16-20	NT-SH065	NT-ST080	NT-WR025	NT-ST030	NT-FT15
NT-V20Q-SIR16-24					
NT-V25R-SIR16-30					
NT-V32S-SIR16-37					



TURNING

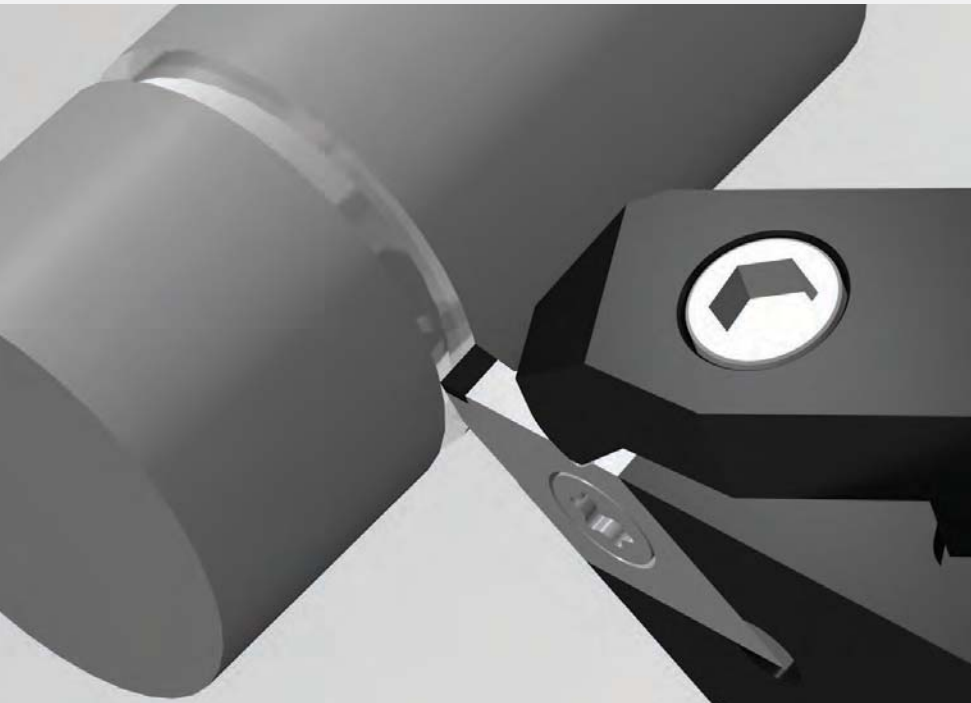
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



GROOVING

Advanced .193

Holders .195



GROOVING Advanced

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

<h1>BGF</h1>	<h2>DIAMOND-PCBN</h2> <h3>External grooving</h3>				ISO513 ND120 NDR4500	DP	BH		
	Size	IC	S	CDX		P	140		
	100	12.70	4.76	1.8	M	300	◀ SINTERED POWDER METAL		
	150	12.70	4.76	2.6	K	400			
	200	12.70	4.76	3.0	N	1200			
	250	12.70	4.76	3.5	S	500			
	300÷400	12.70	4.76	4.5	H	2000			
GRADE APPLICATION AREA	Stable machining, continuous cut								
main application	General machining, light interruption				+				
applicable	Unstable machining, interrupted cut				-				

FLAT picture: right-hand	BGF N H	BGF%/L	100-010	N	CW 1.00	RE 0.10	f _n ▶ 0.04	0.08	0.12	○*				
				H	CW 1.00	RE 0.10	f _n ▶ 0.04	0.05	0.06	○				
			150-010	N	CW 1.50	RE 0.10	f _n ▶ 0.04	0.08	0.12	○*				
				H	CW 1.50	RE 0.10	f _n ▶ 0.04	0.05	0.06	○				
			200-020	N	CW 2.00	RE 0.20	f _n ▶ 0.06	0.10	0.14	○*				
				H	CW 2.00	RE 0.20	f _n ▶ 0.04	0.06	0.08	○				
			250-020	N	CW 2.50	RE 0.20	f _n ▶ 0.06	0.10	0.14	○*				
				H	CW 2.50	RE 0.20	f _n ▶ 0.04	0.06	0.08	○				
			300-020	N	CW 3.00	RE 0.20	f _n ▶ 0.06	0.10	0.14	○*				
				H	CW 3.00	RE 0.20	f _n ▶ 0.04	0.06	0.08	○				
			350-020	N	CW 3.50	RE 0.20	f _n ▶ 0.08	0.12	0.16	○*				
				H	CW 3.50	RE 0.20	f _n ▶ 0.06	0.08	0.10	○				
			400-020	N	CW 4.00	RE 0.20	f _n ▶ 0.08	0.12	0.16	○*				
				H	CW 4.00	RE 0.20	f _n ▶ 0.06	0.08	0.10	○				
			FULL RADIUS picture: right-hand	BGF N H	BGF%/L	100-050FR	N	CW 1.00	RE 0.50	f _n ▶ 0.04	0.08	0.12	○*	
							H	CW 1.00	RE 0.50	f _n ▶ 0.04	0.05	0.06	○	
						150-075FR	N	CW 1.50	RE 0.75	f _n ▶ 0.04	0.08	0.12	○*	
							H	CW 1.50	RE 0.75	f _n ▶ 0.04	0.05	0.06	○	
200-100FR	N	CW 2.00				RE 1.00	f _n ▶ 0.06	0.10	0.14	○*				
	H	CW 2.00				RE 1.00	f _n ▶ 0.04	0.06	0.08	○				
250-125FR	N	CW 2.50				RE 1.25	f _n ▶ 0.06	0.10	0.14	○*				
	H	CW 2.50				RE 1.25	f _n ▶ 0.04	0.06	0.08	○				
300-150FR	N	CW 3.00				RE 1.50	f _n ▶ 0.06	0.10	0.14	○*				
	H	CW 3.00				RE 1.50	f _n ▶ 0.04	0.06	0.08	○				
350-175FR	N	CW 3.50				RE 1.75	f _n ▶ 0.08	0.12	0.16	○*				
	H	CW 3.50				RE 1.75	f _n ▶ 0.06	0.08	0.10	○				
400-200FR	N	CW 4.00				RE 2.00	f _n ▶ 0.08	0.12	0.16	○*				
	H	CW 4.00				RE 2.00	f _n ▶ 0.06	0.08	0.10	○				

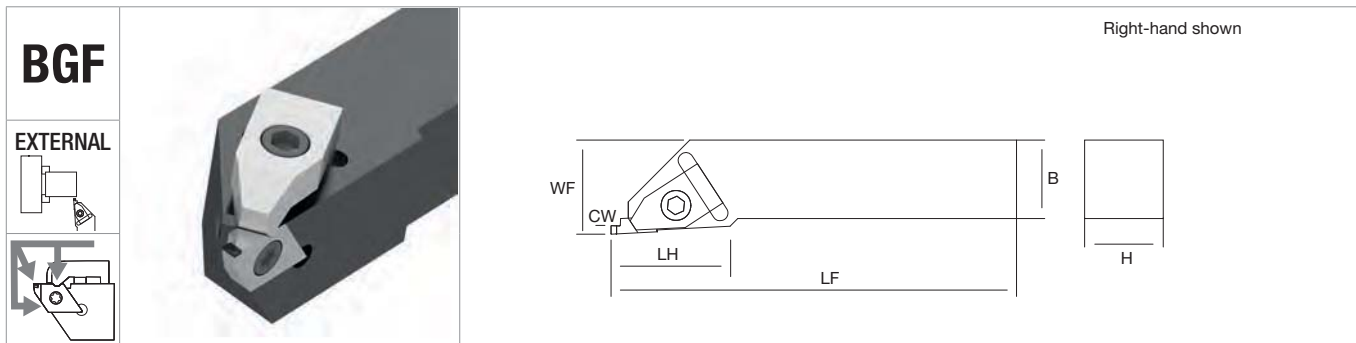
○ non-standard stock

*Only right-hand available



GROOVING Holders

TURNING



THREADING

BGF-HLD External grooving		R	L	H	B	WF	LF	LH		MID	

CW 1÷4	BGF-HLD 1616 [°] /L	▽		16	16	30	150	45		BGF [°] /L□□□	
	BGF-HLD 2020 [°] /L	●	●	20	20	30	150	45			
	BGF-HLD 2525 [°] /L	●	●	25	25	30	150	45			

● stock standard, ▽ stock exhaustion

GROOVING

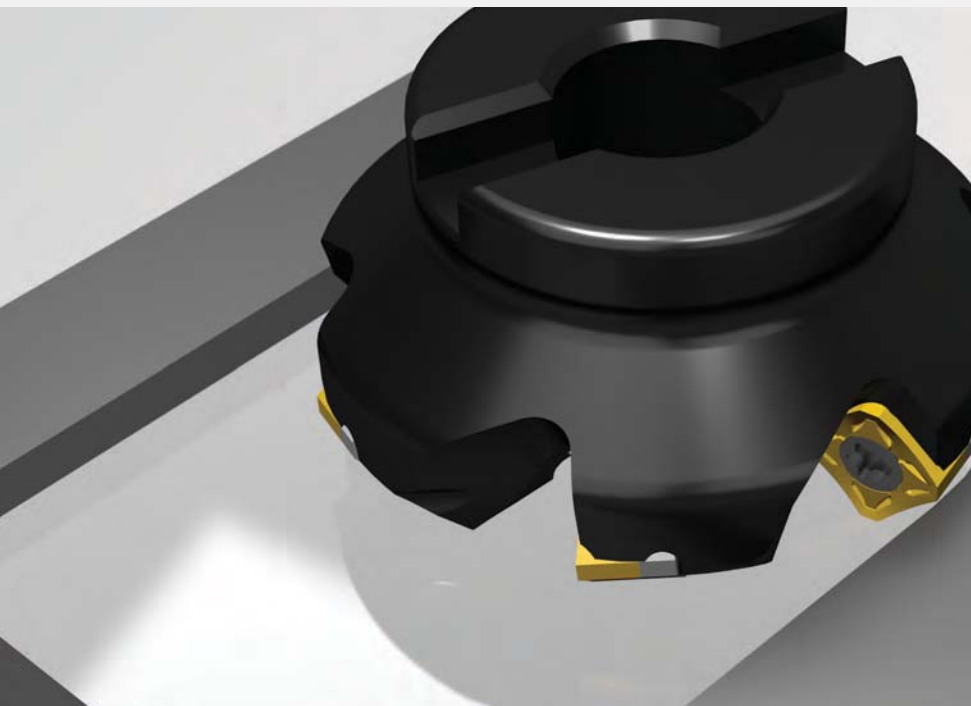


BGF-HLF 1616 [°] /L	NT-CS300 [°] /L	NT-SC300	NT-WR040	NT-ST300	NT-FT15
BGF-HLF 2020 [°] /L					
BGF-HLF 2525 [°] /L					

MILLING

DRILLING

ACCESSORIES



MILLING

Shouldering .199

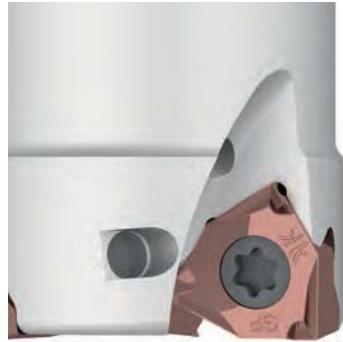
Facing .209

High Feed .223

Copying .229

Chamfering .237

Advanced .241



MILLING Shouldering

DOUBLE3GON .200

REKPLUS .202

APKT ISO .206

TURNING

THREADING

GROOVING

MILLING

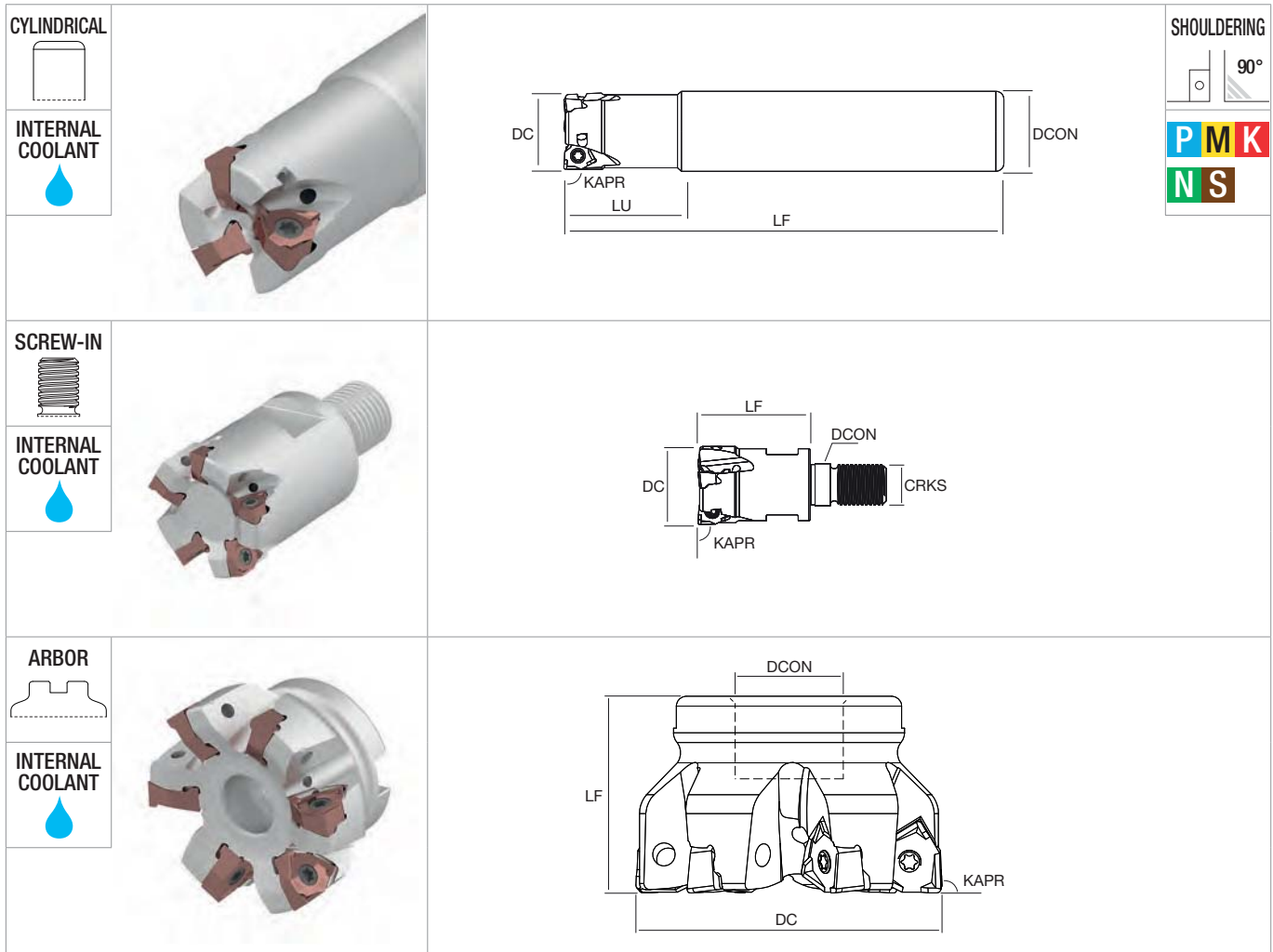
DRILLING

ACCESSORIES

WNE X	DOUBLE3GON Shouldering double side				ISO513	HC-PVD				HC-CVD			HW
	Size	IC	S	D1		JP5530	JP5540	JP7525	JP8525	JP9525	JC7515	JC7530	JC8530
	P	60 230	60 220	80 250								100 320	
	M	60 150	60 200	70 220									
	K			100 240					120 350	100 300			
	N												200 1000
	S			40 100									
	H												
GRADE APPLICATION AREA		Light cut, stable machining			+								
main application		Variable condition, general machining			-								
applicable		Heavy cut, unstable machining			+								
SHARP SC P M S	WNE X 080604R-SC	RE 0.4 BS 1.8	a_p ▶ 0.50 f_z ▶ 0.08	4.00 0.14	7.00 0.20	●		●					
	WNE X 080608R-SC	RE 0.8 BS 1.5	a_p ▶ 1.00 f_z ▶ 0.10	4.00 0.16	7.00 0.22	●		●					
GENERAL GP P M K	WNE X 040304R-GP	RE 0.4 BS 0.9	a_p ▶ 0.50 f_z ▶ 0.06	1.80 0.12	3.00 0.18	▲		●	▽		●	●	
	WNE X 080608R-GP	RE 0.8 BS 1.5	a_p ▶ 1.00 f_z ▶ 0.14	4.00 0.20	7.00 0.26	▲	●	▲	●	▽	▲	●	●
REINFORCED TE P K	WNE X 080608R-TE	RE 0.8 BS 1.5	a_p ▶ 1.00 f_z ▶ 0.14	4.00 0.22	7.00 0.30	▲	●	▲	●	▽	▲	●	●
	WNE X 080612R-TE	RE 1.2 BS 1.1	a_p ▶ 1.00 f_z ▶ 0.14	4.00 0.24	7.00 0.34		●	●				●	●
ALUMINIUM AL N polished surface	WNE X 080608R-AL	RE 0.8 BS 1.4	a_p ▶ 1.00 f_z ▶ 0.10	4.00 0.17	7.00 0.24								●

● stock standard, ▲ upcoming introduction, ▽ stock exhaustion

Spare Parts	INSERT SCREW	INSERT WRENCH
NT-WX04H D₀₀₀	NT-ST018	NT-FTB08
NT-WX08H D₀₀₀	NT-ST017	NT-FTB15



TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

DOUBLE3GON Shouldering (KAPR 90°)		DC		DCON	LF	LU	CRKS		MIID
---	--	----	--	------	----	----	------	--	------

TYPE	HOLDER	ITEM	STOCK	DC	Z	DCON	LF	LU	CRKS	WG	MIID
CYLINDRICAL	NT-WX04H	D020-S16-Z3	●	20	3	16	110	20	-	0.30	WNEX04
		D020-S20-Z3	●								
	D025-S20-Z4	●	25	4	20	120	22	-	0.50		
		D025-S25-Z5								●	
	D032-S32-Z5	●	32	5	25	130	25	-	0.80		
		D032-S32-Z5								●	
SCREW-IN	NT-WX04H	D020-M10-Z3	●	20	3	10.5	28	-	M10	0.10	WNEX04
		D025-M12-Z4	●	25	4	12.5	30	-	M12	0.15	
		D032-M16-Z5	●	32	5	17	40	-	M16	0.25	
ARBOR	NT-WX04H	D040-F16-Z7	●	40	7	16	40	-	-	0.25	WNEX04
		D050-F22-Z9	●	50	9	22	40	-	-	0.50	
	NT-WX08H	D050-F22-Z4	●	50	4	22	40	-	-	0.45	WNEX08
			D050-F22-Z5								
		D063-F22-Z6	●	63	6	22	40	-	-	0.70	
			D063-F27-Z6								
		D063-F22-Z7	●	63	7	22	40	-	-	0.80	
			D080-F27-Z7								
		D080-F27-Z9	●	80	9	27	50	-	-	1.00	
			D100-F32-Z8								
		D100-F32-Z11	●	100	11	32	50	-	-	1.60	
D125-F40-Z11	●		11								40
D160-F40-Z12	●	160	12	40	63	-	-	4.00			

● stock standard

TURNS
TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

NT-RKP		REKPLUS					ISO513	HC-PVD						CVD	HW	HT	
		Size	IC	S	D1	AN		JPS520	JPS530	JP7615	JP7525	JP8625	JPS935	JP9635	JC7515	JU6520	JU4525
		Shouldering - positive						P 80 250 60 230				80 250		60 200 60 200		120 350	160 350 100 240
		11	6.35	3.50	2.80	11°	M										
		16	9.525	4.76	4.50	11°	K		120 250	100 240							
							N										
							S				40 100	40 100					
							H										
	GRADE APPLICATION AREA	Light cut, stable machining				+	○										
	main application	Variable condition, general machining				-	○										
	applicable	Heavy cut, unstable machining				+	○										

HSC P M S	NT-RKP	IC	RE	AN	S	D1	AN	Hardness		Toughness		Application																		
								+	-	+	-	JPS520	JPS530	JP7615	JP7525	JP8625	JPS935	JP9635	JC7515	JU6520	JU4525									
 low cutting force		11R04M-HSC	RE 0.4	a _p ▶	0.50	4.50	8.00	0.10	0.15																					
		11R08M-HSC	RE 0.8	a _p ▶	1.00	4.50	8.00	0.10	0.15																					
		11R12M-HSC	RE 1.2	a _p ▶	1.00	4.50	8.00	0.10	0.15																					
		16R08M-HSC	RE 0.8	a _p ▶	1.00	7.00	13.00	0.14	0.18																					
		16R12M-HSC	RE 1.2	a _p ▶	1.00	7.00	13.00	0.14	0.18																					
			11R04M-HGP	RE 0.4	a _p ▶	0.50	4.50	8.00	0.14	0.20																				
HGP P M K 1st choice, general purpose		11R08M-HGP	RE 0.8	a _p ▶	1.00	4.50	8.00	0.14	0.20																					
		11R12M-HGP	RE 1.2	a _p ▶	1.00	4.50	8.00	0.14	0.20																					
		11R16M-HGP	RE 1.6	a _p ▶	1.00	4.50	8.00	0.14	0.20																					
		16R08M-HGP	RE 0.8	a _p ▶	1.00	7.00	13.00	0.17	0.25																					
		16R12M-HGP	RE 1.2	a _p ▶	1.00	7.00	13.00	0.17	0.25																					
		16R16M-HGP	RE 1.6	a _p ▶	1.00	7.00	13.00	0.17	0.25																					
		16R20M-HGP	RE 2.0	a _p ▶	1.00	7.00	13.00	0.17	0.25																					
	16R31M-HGP	RE 3.1	a _p ▶	1.00	7.00	13.00	0.17	0.25																						
SC P M low cutting force		NT-RKP 11R08M-SC	RE 0.8	a _p ▶	1.00	4.50	8.00	0.10	0.15	▽	▽				▽															
		NT-RKP 16R08M-SC	RE 0.8	a _p ▶	1.00	7.00	13.00	0.14	0.18	▽					▽															
		NT-RKP 11R08M-GP	RE 0.8	a _p ▶	1.00	4.50	8.00	0.14	0.20	●	●	●	●		▽															
GP P M K general purpose		NT-RKP 16R08M-GP	RE 0.8	a _p ▶	1.00	7.00	13.00	0.17	0.25	●	●	○	●		▽															
		NT-RKP 11R08M-TE	RE 0.8	a _p ▶	1.00	4.50	8.00	0.16	0.22	●	●	○																		
TE P K reinforced edge		NT-RKP 16R08M-TE	RE 0.8	a _p ▶	1.00	7.00	13.00	0.20	0.28	●	●	○																		

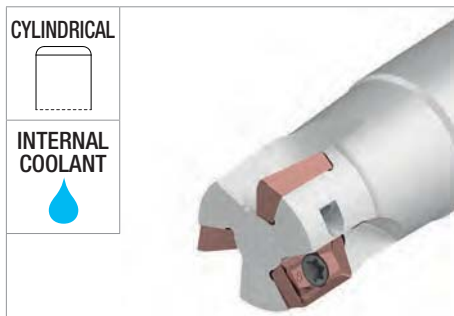
● stock standard, ○ non-standard stock, ▽ stock exhaustion

NT-RKP		REKPLUS Shouldering - positive					ISO513	HC-PVD						CVD	HW	HT										
								JP5520	JP5530	JP7615	JP7525	JP8625	JP9535	JP9635	JC7515	JU6520	JU4525									
								80 250	60 230			80 250						160 350								
	Size	IC	S	D1	AN	P																				
	11	6.35	3.50	2.80	11°	M																				
	16	9.525	4.76	4.50	11°	K																				
						N																				
						S																				
						H																				
GRADE APPLICATION AREA		Light cut, stable machining				+																				
	main application		Variable condition, general machining				-																			
	applicable		Heavy cut, unstable machining				+																			
STRAIGHT TYPE		AL	NT-RKP 11R04G-AL	RE 0.4	a_p	0.50	4.50	8.00																		
			11R08G-AL	RE 0.8	a_p	1.00	4.50	8.00																		
			NT-RKP 16R08G-AL	RE 0.8	a_p	1.00	7.00	13.00																		
						f_z	0.10	0.17	0.25																	

● stock standard

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

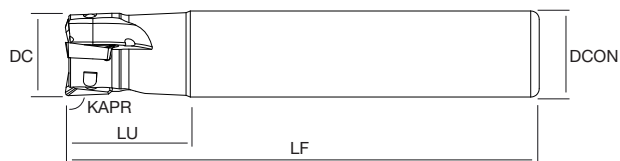
TURNING



CYLINDRICAL



INTERNAL COOLANT

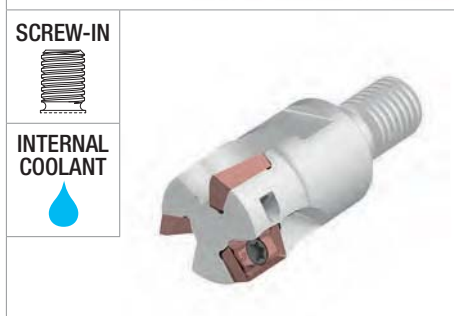


SHOULDERING



PMK
NS

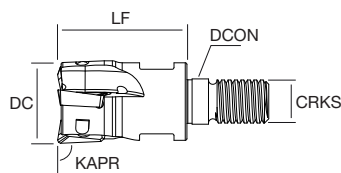
THREADING



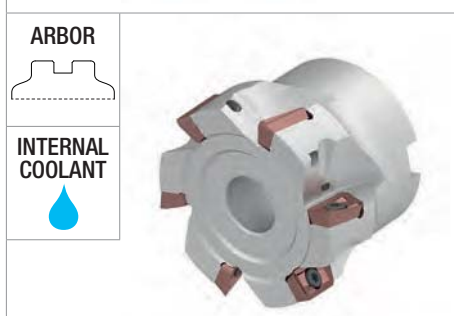
SCREW-IN



INTERNAL COOLANT



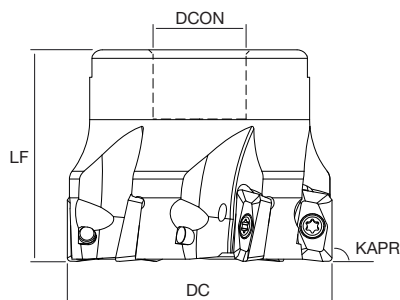
GROOVING



ARBOR



INTERNAL COOLANT



MILLING

REKPLUS Shouldering (KAPR 90°)

DC DCON LF LU CRKS MIID

			DC		DCON	LF	LU	CRKS		MIID
CYLINDRICAL	NT-RKP11	D016-S16-Z2	16	●	2	16	100	25	-	0.15
		D020-S16-Z3	20	●	3	16	110	30	-	0.25
	D020-S20-Z3	20	●	3	20	110	30	-	0.30	
	D025-S20-Z3	25	●	3	20	120	35	-	0.40	
	D025-S25-Z3		●	3	25	120	35	-	0.50	
	D025-S25-Z4		●	4	25	120	35	-	0.50	
	D032-S25-Z4	32	●	4	25	130	35	-	0.60	
	D032-S32-Z4		●	4	32	130	35	-	1.00	
D032-S32-Z5	●		5	32	130	35	-	1.00		
NT-RKP16	D025-S25-Z2	25	●	2	25	120	35	-	0.45	
	D032-S32-Z3	32	●	3	32	130	45	-	0.75	
	D040-S32-Z4	40	●	4	32	150	45	-	1.00	
CYLINDRICAL LONG	NT-RKP11	D016-S15-Z2-L160	16	●	2	15	160	25	-	0.25
		D016-S16-Z2-L160		●	2	16	160	25	-	0.30
	D017-S16-Z2-L170	17	●	2	16	170	25	-	0.35	
	D020-S19-Z3-L200	20	●	3	19	200	30	-	0.50	
	D020-S20-Z3-L200		●	3	20	200	30	-	0.50	
	D021-S20-Z3-L210	21	●	3	20	210	30	-	0.50	
	D025-S24-Z3-L250	25	●	3	24	250	35	-	1.00	
	D025-S25-Z3-L250		●	3	25	250	35	-	1.00	
D026-S25-Z3-L260	●		3	25	260	35	-	1.00		

● stock standard

REKPLUS Shouldering (KAPR 90°)				DC		DCON	LF	LU	CRKS		MIID	
WELDON	NT-RKP11	D016-W16-Z2-L080	●	16	2	16	80	25	-	0.15	NT-RKP11	
		D020-W20-Z3-L090	●	20	3	20	90	30	-	0.20		
		D025-W25-Z4-L100	●	25	4	25	100	35	-	0.35		
SCREW-IN	NT-RKP11	D016-M08-Z2	●	16	2	8.5	25	-	M8	0.05	NT-RKP11	
		D020-M10-Z2	▽	20	2	10.5	30	-	M10	0.10		
		D020-M10-Z3	●		3	10.5	38	-	M10	0.10		
		D025-M12-Z3	●	25	3	12.5	38	-	M12	0.15		
		D025-M12-Z4	●		4	12.5	38	-	M12	0.15		
		D032-M16-Z4	●	32	4	17	43	-	M16	0.25		
	D032-M16-Z5	●	5		17	43	-	M16	0.25			
	NT-RKP16	D025-M12-Z2	●	25	2	12.5	38	-	M12	0.15		NT-RKP16
		D032-M16-Z3	●	32	3	17	43	-	M16	0.25		
D040-M16-Z4		●	40	4	17	43	-	M16	0.30			
ARBOR	NT-RKP11	D040-F16-Z5	●	40	5	16	40	-	-	0.25	NT-RKP11	
		D040-F16-Z6	●		6	16	40	-	-	0.25		
		D050-F22-Z5	●	50	5	22	40	-	-	0.45		
		D050-F22-Z7	●		7	22	40	-	-	0.45		
		D063-F22-Z6	●	63	6	22	40	-	-	0.65		
		D063-F22-Z8	●		8	22	40	-	-	0.65		
		D080-F27-Z7	●	80	7	27	50	-	-	1.20		
	D080-F27-Z10	●	10		27	50	-	-	1.20			
	NT-RKP16	D040-F16-Z4	●	40	4	16	40	-	-	0.25		NT-RKP16
		D040-F16-Z5	●		5	16	40	-	-	0.25		
		D050-F22-Z4	●	50	4	22	40	-	-	0.50		
		D050-F22-Z5	●		5	22	40	-	-	0.50		
		D063-F22-Z5	●	63	5	22	40	-	-	0.80		
		D063-F22-Z6	●		6	22	40	-	-	0.80		
		D080-F27-Z6	●	80	6	27	50	-	-	1.20		
D080-F27-Z8		●	8		27	50	-	-	1.20			
D100-F32-Z7	●	100	7	32	50	-	-	1.70				
D100-F32-Z9	●		9	32	50	-	-	1.70				

● stock standard, ▽ stock exhaustion

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-RKP11 D□□□	NT-ST018N	NT-FTB08
NT-RKP16 D□□□	NT-ST017N	NT-FTB15

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

THREADING

GROOVING



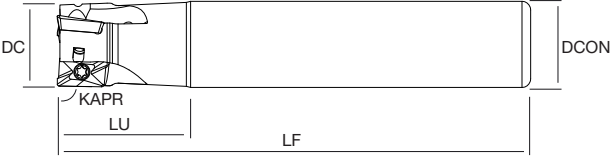









MILLING



DRILLING

ACCESSORIES

APKT	ISO					ISO513	HC-PVD		HC-CVD	HW														
	Size	IC	S	D1	AN		JP5540	JP8525	JP9525	JC7530	JC8530	JU6520												
	10	6.70	3.18	2.80	11°	P	60 220	80 250		100 320														
	16	9.525	4.76	4.40	11°	M	60 200	70 220																
							K				100 300													
							N						200 1000											
							S	40 100																
							H																	
GRADE APPLICATION AREA		Light cut, stable machining					+																	
● main application		Variable condition, general machining					-																	
● applicable		Heavy cut, unstable machining					+																	
GENERAL		APKT 1003PDSR-GP	RE 0.5 BS 0.9	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.08	4.00 0.14	7.00 0.20	●	●		●	●													
		APKT 1604PDSR-GP	RE 1.0 BS 1.9	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	7.00 0.17	13.00 0.25	●	●		●	●													
REINFORCED		APKT 1003PDSR-TE	RE 0.5 BS 0.9	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	4.00 0.16	7.00 0.22	●	●		●	●													
		APKT 1604PDSR-TE	RE 1.0 BS 1.3	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.12	7.00 0.20	13.00 0.28	▲	●	▽	●	●													
ALUMINIUM	 polished surface	APKT 1003PDFR-AL	RE 0.5 BS 1.6	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	4.00 0.17	7.00 0.25					●													
		APKT 1604PDFR-AL	RE 1.0 BS 1.9	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	7.00 0.20	13.00 0.30					●													

● stock standard, ▲ upcoming introduction, ▽ stock exhaustion

<p>CYLINDRICAL</p> 			<p>SHOULDERING</p>  90° 							
<p>INTERNAL COOLANT</p> 										
<p>ARBOR</p> 										
<p>INTERNAL COOLANT</p> 										
<p>APKT ISO Shouldering (KAPR 90°)</p>				<p>DC</p> 	<p>DCON</p>	<p>LF</p>	<p>LU</p>	<p>CRKS</p>		<p>MIID</p>

			DC		DCON	LF	LU	CRKS		MIID	
CYLINDRICAL	NT-APK10H	D016-S16-Z2	●	16	2	16	100	28	-	0.15	APKT10
		D020-S20-Z3	●	20	3	20	110	30	-	0.25	
		D025-S25-Z3	●	25	3	25	120	30	-	0.45	
		D032-S32-Z4	●	32	4	32	130	40	-	0.75	
CYLINDRICAL	NT-APK16H	D025-S25-Z2	●	25	2	25	120	40	-	0.45	APKT16
		D032-S32-Z3	●	32	3	32	130	45	-	0.75	
ARBOR	NT-APK10H	D040-F16-Z5	●	40	5	16	40	-	-	0.25	APKT10
		D050-F22-Z5	●		5	22	50	-	-	0.45	
		D050-F22-Z7	●		7	22	50	-	-	0.45	
	NT-APK16H	D040-F16-Z4	●	40	4	16	40	-	-	0.25	APKT16
		D050-F22-Z4	●		4	22	50	-	-	0.55	
		D050-F22-Z5	●		5	22	50	-	-	0.55	
		D063-F22-Z5	●	63	5	22	40	-	-	0.80	
		D063-F22-Z6	●		6	22	40	-	-	0.80	
		D080-F27-Z6	●		80	6	27	50	-	-	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-APK10H D ₀₀₀	NT-ST011	NT-FTB09
NT-APK16H D ₀₀₀	NT-ST019	NT-FTB15

TURNING

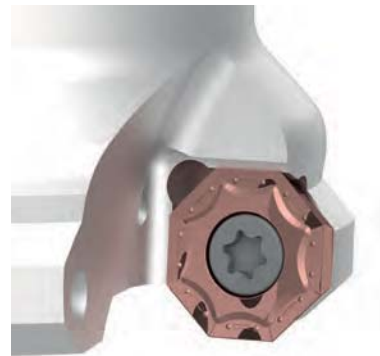
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



MILLING Facing

DOUBLE4FACE .210

DOUBLEHEX .212

4FACEPLUS .214

OKTOPLUS .218

SEHX12 ISO .222

TURNING

THREADING

GROOVING

MILLING

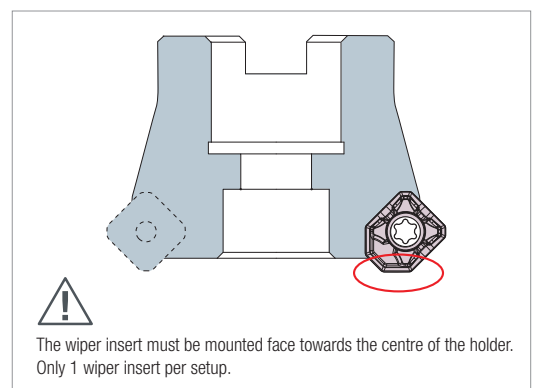
DRILLING

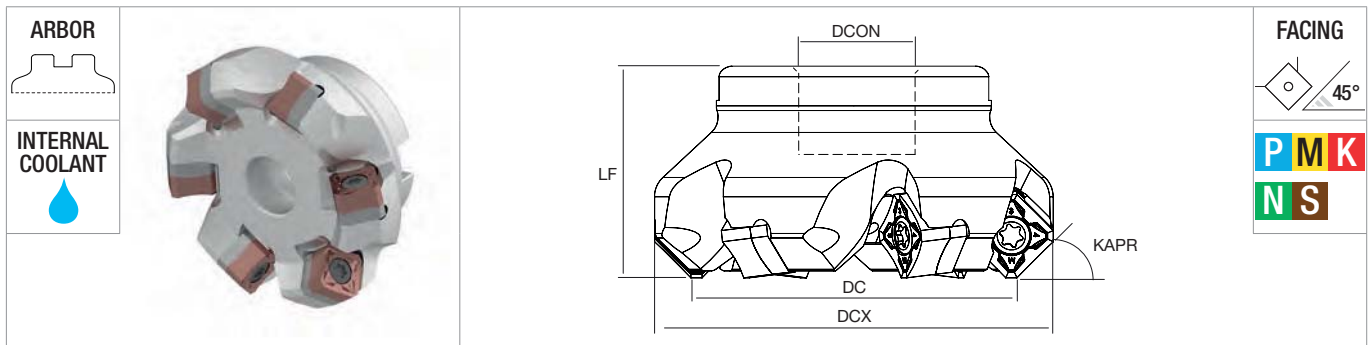
ACCESSORIES

SN_□X	DOUBLE4FACE Facing 45° - double sided				ISO513	HC-PVD				HC-CVD	HW																														
	Size	IC	S	D1		JP5520	JP5530	JP7525	JP9535	JP7515	JP6520																														
<p>8 edges</p>	12	12.70	6.35	5.90	P 80 250	60 230																																			
					M 60 160	60 150		60 200																																	
					K 100 240	120 350																																			
					N 200 1000																																				
					S 40 100																																				
					H																																				
GRADE APPLICATION AREA				Light cut, stable machining				+																																	
main application				Variable condition, general machining				-																																	
applicable				Heavy cut, unstable machining				+																																	

SHARP SC P M S	SNEX	1205ANEN-SC	BS 2.2	a _p ▶ 0.50 f _z ▶ 0.08	2.00 3.50 0.16 0.24										
						● ● ● ● ● ● ● ● ● ● ● ●									
GENERAL GP P M K	SNEX	1205ANEN-GP	BS 2.2	a _p ▶ 1.00 f _z ▶ 0.10	2.50 4.00 0.23 0.36	● ● ● ● ● ● ● ● ● ● ● ●									
						SNMX 1205ANEN-GP BS 2.2 a _p ▶ 1.00 f _z ▶ 0.10 2.50 4.00 0.23 0.36 ● ● ▲ ▲ ●									
REINFORCED TE P K	SNEX	1205ANSN-TE	BS 2.2	a _p ▶ 1.50 f _z ▶ 0.14	3.00 4.50 0.27 0.40	● ● ● ● ● ● ● ● ● ● ● ●									
						SNMX 1205ANSN-TE BS 2.2 a _p ▶ 1.50 f _z ▶ 0.14 3.00 4.50 0.27 0.40 ● ● ▲ ▲									
WIPER WU P K	SNEX	1205-WU	BS 5.6	a _p ▶ 0.50 f _z ▶ 0.08	1.00 1.50 0.16 0.24	● ● ● ● ● ● ● ● ● ● ● ●									
ALUMINIUM AL N	SNEX	1205ANFN-AL	BS 2.2	a _p ▶ 0.50 f _z ▶ 0.10	2.50 4.50 0.22 0.35	●									

● stock standard, ▲ upcoming introduction





DOUBLE4FACE Facing (KAPR 45°)	DC	DCX		DCON	LF		MIID

ARBOR	NT-SX12H	D050-F22-Z4	●	50	64	4	22	40	0.60	SNEX12 SNMX12
		D050-F22-Z5	●			5	22	40	0.60	
		D063-F22-Z5	●	63	77	5	22	50	0.80	
		D063-F22-Z6	●			6	22	50	0.80	
		D080-F27-Z6	●	80	94	6	27	50	1.40	
		D080-F27-Z7	●			7	27	50	1.40	
		D080-F27-Z8	●			8	27	50	1.40	
		D100-F32-Z7	●	100	114	7	32	50	1.80	
		D100-F32-Z8	●			8	32	50	1.80	
		D100-F32-Z9	●			9	32	50	1.80	
		D125-F40-Z10	●	125	139	10	40	63	3.10	
		D160-F40-Z12	●	160	174	12	40	63	4.60	

● stock standard

Spare Parts	SHIM	SHIM SCREW	SHIM WRENCH	INSERT SCREW	INSERT WRENCH
NT-SX12H D□□□	NT-SH009	NT-SR009	NT-WR040	NT-ST029	NT-FTB15

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

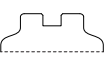
DRILLING


ACCESSORIES

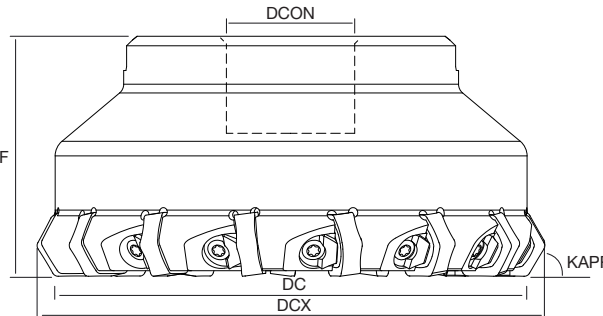
<h1>HN</h1>		<h2>DOUBLEHEX</h2> Facing 60° - double sided				ISO513 P M K N S H	HC-PVD	HC-CVD	CN	BH										
		JP7525	JC7515	NSN400	NBN500															
GRADE APPLICATION AREA ■ main application ■ applicable	Light cut, stable machining				+ - +															
	Variable condition, general machining																			
	Heavy cut, unstable machining																			
		HNEX	090510-GL	RE 1.0	a_p 0.50 f_z 0.08	2.50 0.15	4.50 0.22	●	●											
low cutting force			090520-GL	RE 2.0	a_p 0.50 f_z 0.10	2.50 0.18	4.50 0.26	●	●											
		HNEX	090520-GG	RE 2.0	a_p 1.00 f_z 0.12	3.00 0.23	5.00 0.34	●	●											
general purpose		HNMX	090520-GG	RE 2.0	a_p 1.00 f_z 0.12	3.00 0.23	5.00 0.34	●	●											
		HNEX	090516-GH	RE 1.6	a_p 1.00 f_z 0.14	3.50 0.25	6.00 0.36	●	●											
reinforced edge			090530-GH	RE 3.0	a_p 1.00 f_z 0.16	3.50 0.28	6.00 0.40	●	●											
		HNMX	090516-GH	RE 1.6	a_p 1.00 f_z 0.14	3.50 0.25	6.00 0.36	●	●											
		HNEN	090520S-UE	RE 2.0	K a_p 1.00 f_z 0.10	2.00 0.20	3.00 0.30			●										
solid				RE 2.0	H a_p 0.50 f_z 0.05	1.00 0.10	1.50 0.15													
		HNEN	090520-GP	RE 2.0	a_p 1.00 f_z 0.08	2.50 0.16	4.00 0.24			●										
			090530-GP	RE 3.0	a_p 1.00 f_z 0.08	2.50 0.16	4.00 0.24			●										

● stock standard

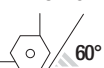
ARBOR







FACING



K

DOUBLEHEX
Facing (KAPR 60°)

	DC	DCX	Z	DCON	LF	KG	MIID
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ARBOR	NT-HN09	D080-F27-Z8	●	80	90	8	27	50	1.40	HNEX09 HNMX09
		D080-F27-Z10	●			10	27	50	1.40	
D100-F32-Z10	●	10	32	50	2.00					
D100-F32-Z14	●	14	32	50	2.00					
D125-F40-Z12	●	12	40	63	3.80					
D125-F40-Z15	●	15	40	63	3.80					
D160-F40-Z15	●	15	40	63	5.30					
D160-F40-Z20	●	20	40	63	5.30					

● stock standard

Spare Parts

WEDGE	WEDGE SCREW	WRENCH
		

NT-HN09 D□□□	NT-WD090	NT-SC090	NT-WR030
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- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

	SE□□	4FACEPLUS					ISO513	HC-PVD				HC-CVD	HW	HT								
		Size	IC	S	D1	AN		P	JP5520	JP5530	JP7525	JP9535	JC7515	JC7530	JU6520	JU4525						
		13	13.40	3.97	4.40	20°	P	80 250	60 230					160 350								
							M	60 160	60 150		60 200			100 240								
							K			100 240		120 350	100 300	160 380								
							N							200 1000								
							S				40 100											
							H															
	GRADE APPLICATION AREA	Light cut, stable machining				+																
	main application	Variable condition, general machining				-																
	applicable	Heavy cut, unstable machining				+																
SHARP		SEET	13T3AGEN-SC	BS 1.7	$a_p \triangleright$ 0.50 $f_z \triangleright$ 0.08	2.00 0.14	3.50 0.20	●	●		●											
GENERAL		SEET	13T3AGEN-GP	BS 1.2	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	2.50 0.20	4.00 0.30	●	●		●			●								
		SEMT	13T3AGEN-GP	BS 1.2	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.10	2.50 0.20	4.00 0.30	●	●		●											
GG		SEET	13T3AGSN-GG	BS 1.3	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.12	2.50 0.22	4.00 0.32				●	▽										
		SEMT	13T3AGSN-GG	BS 1.3	$a_p \triangleright$ 1.00 $f_z \triangleright$ 0.12	2.50 0.22	4.00 0.32				▲											
TE		SEET	13T3AGSN-TE	BS 1.2	$a_p \triangleright$ 1.50 $f_z \triangleright$ 0.14	3.00 0.25	4.50 0.36	●	●													
		SEMT	13T3AGSN-TE	BS 1.2	$a_p \triangleright$ 1.50 $f_z \triangleright$ 0.14	3.00 0.25	4.50 0.36	●	●													
REINFORCED		SEET	13T3AGSN-GH	BS 1.3	$a_p \triangleright$ 1.50 $f_z \triangleright$ 0.16	3.00 0.28	4.50 0.40				●											
		SEMT	13T3AGSN-GH	BS 1.3	$a_p \triangleright$ 1.50 $f_z \triangleright$ 0.16	3.00 0.28	4.50 0.40				▲											
	Flat		SEEW	13T3AGSN	BS 2.0	$a_p \triangleright$ 1.50 $f_z \triangleright$ 0.20	3.00 0.30	4.50 0.40						●								
WIPER		SEET	13T3-WU	BS 7.5	$a_p \triangleright$ 0.50 $f_z \triangleright$ 0.08	1.00 0.16	1.50 0.24	●	▲													
		1 edge																				

● stock standard, ▲ upcoming introduction, ▽ stock exhaustion

SE□□	4FACEPLUS Facing 45° - positive					ISO513	HC-PVD				HC-CVD	HW	HT												
	Size	IC	S	D1	AN		JP5520	JP5530	JP7525	JP9535	JG7515	JG7530	JU6520	JU4525											
						P	80 250	60 230					160 350												
	13	13.40	3.97	4.40	20°	M	60 160	60 150		60 200			100 240												
						K			100 240		120 350	100 300	160 380												
						N							200 1000												
						S				40 100															
						H																			
GRADE APPLICATION AREA		Light cut, stable machining				+																			
■ main application		Variable condition, general machining				-																			
■ applicable		Heavy cut, unstable machining				+																			
ALUMINIUM	AL N																								
SEET	13T3AGFN-AL	BS 2.2	$a_p \triangleright$ 0.50	2.50	4.50																				
			$f_p \triangleright$ 0.10	0.22	0.35																				
							●																		

● stock standard

!

The wiper insert must be mounted face towards the centre of the holder. Only 1 wiper insert per setup.

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

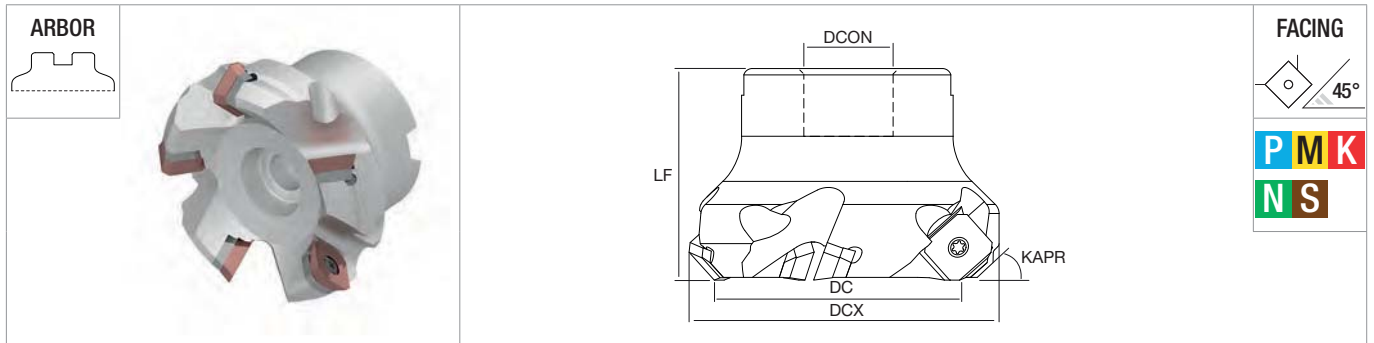
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



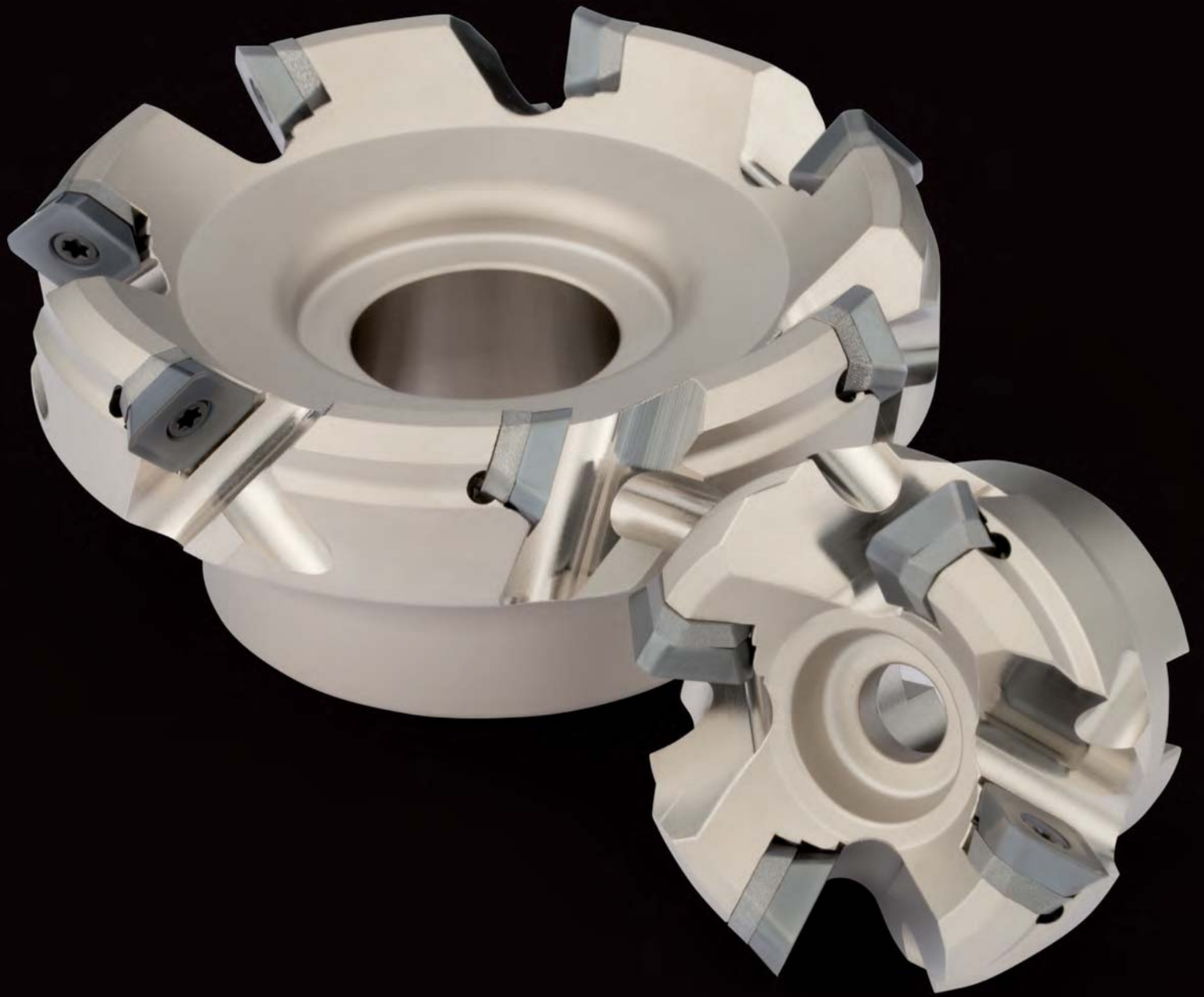
4FACEPLUS Facing (KAPR 45°)	DC	DCX		DCON	LF		MIID

NT-SE13	Model	●	DC	DCX	Z	DCON	LF	KG	MIID
ARBOR	D050-F22-Z4	●	50	63	4	22	40	0.50	SEET13 SEMT13
	D050-F22-Z5	●			5	22	40	0.50	
	D063-F22-Z5	●	63	76	5	22	50	0.70	
	D063-F22-Z6	●			6	22	50	0.70	
	D080-F27-Z6	●	80	93	6	27	50	1.20	
	D080-F27-Z8	●			8	27	50	1.20	
	D100-F32-Z7	●	100	113	7	32	50	1.80	
	D100-F32-Z10	●			10	32	50	1.80	
	D125-F40-Z8	●	125	138	8	40	63	3.00	
	D125-F40-Z12	●			12	40	63	3.00	
	D160-F40-Z10	●	160	173	10	40	63	5.00	
	D200-F60-Z12	●	200	213	12	60	63	8.00	

● stock standard



NT-SE13 D□□□	NT-SH004	NT-SR002	NT-WR035	NT-ST040	NT-FTB15
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TURNING

THREADING

GROOVING

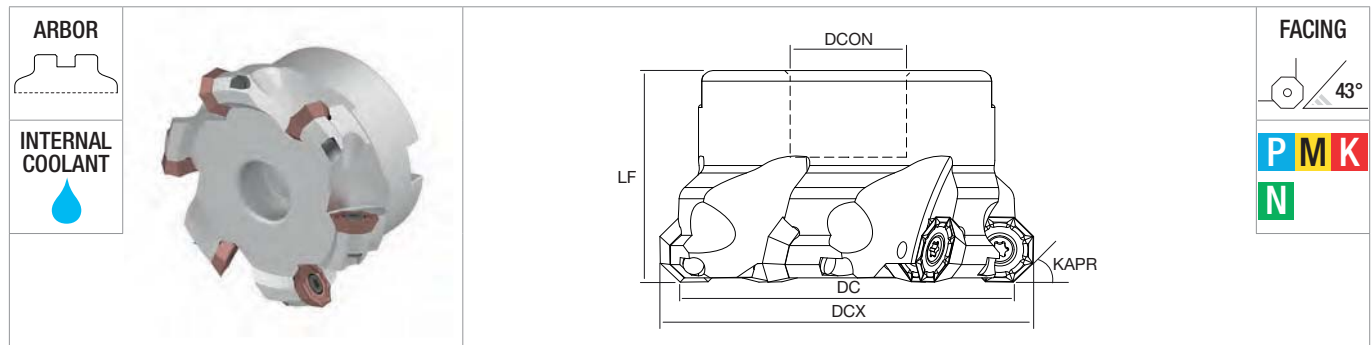
MILLING

DRILLING

ACCESSORIES

OFKT		OKTOPLUS					ISO513		HC-PVD	HC-CVD	HW											
		Size	IC	S	D1	AN	JP8525	JP9525	JC7530	JU6520												
<p>8 edges</p>		05	12.70	3.97	4.40	26°	P 80 250	M 70 220	K 100 300	N 200 1000	S	H										
		GRADE APPLICATION AREA		Light cut, stable machining			+	○	○	○	○											
		main application		Variable condition, general machining			-	○	○	○	○											
		applicable		Heavy cut, unstable machining			+	○	○	○	○											
		Hardness					-	○	○	○	○											
		Toughness					+	○	○	○	○											
GENERAL	GP P M K	OFKT 05T305-GP	RE 0.5 BS 1.1	a_p ▶ 1.00 f_z ▶ 0.07	2.00 0.16	3.00 0.25	●	●	●													
	AL N	OFKT 05T305-AL	RE 0.5 BS 1.1	a_p ▶ 0.50 f_z ▶ 0.10	1.50 0.15	2.50 0.20			●													

● stock standard



ARBOR INTERNAL COOLANT 	OKTOPLUS - OF Facing (KAPR 43°)	DC	DCX		DCON	LF		MIID	

ARBOR	NT-OF05H				DC	DCX	Z	DCON	LF	KG	MIID	OFKT05
		D	F	Z								
		D050-F22-Z5	●	50	58	5	22	40	0.45			
		D063-F22-Z6	●	63	71	6	22	40	0.65			
		D080-F27-Z7	●	80	88	7	27	50	1.00			
		D100-F32-Z8	●	100	108	8	32	50	1.60			

● stock standard



NT-OF05H D□□□	NT-ST024	NT-FTB15
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TURNING

THREADING

GROOVING

MILLING

DRILLING

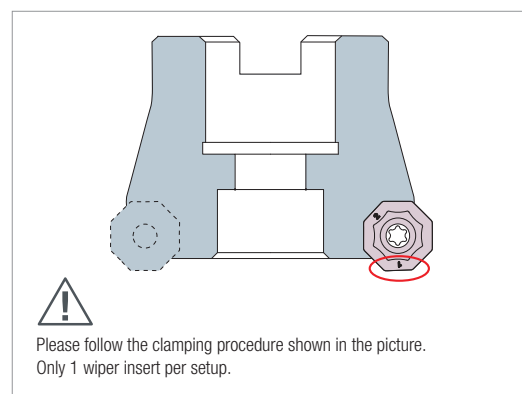
ACCESSORIES

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

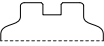
OD-T	OKTOPLUS Facing 43° - positive					ISO513	HC-PVD				HC-CVD	HW							
	Size	IC	S	D1	AN		P	JP5520	JP5530	JP7525	JP9535	JP7515	JP6520						
							M	K	N	S	H								
	06	15.875	5.56	5.50	15°	80 250	60 230												
						60 160	60 150		60 200										
								100 240		120 350									
											200 1000								
										40 100									
GRADE APPLICATION AREA	Light cut, stable machining																		
main application	Variable condition, general machining																		
applicable	Heavy cut, unstable machining																		

	SC P M S																		
SHARP		ODKT 060508-SC	RE 0.8 BS 1.8	a_p ▶ 0.50 f_z ▶ 0.08	1.50 0.15	2.50 0.22	●	●		●									
GENERAL		ODKT 060508-GP	RE 0.8 BS 1.8	a_p ▶ 1.00 f_z ▶ 0.10	2.00 0.21	3.00 0.32	●	●	●	●									
		ODMT 060508-GP	RE 0.8 BS 1.8	a_p ▶ 1.00 f_z ▶ 0.10	2.00 0.21	3.00 0.32	●	●	●	●	●								
REINFORCED		ODKT 060508-TE	RE 0.8 BS 1.8	a_p ▶ 1.50 f_z ▶ 0.14	2.50 0.26	3.50 0.38	●	●											
		ODMT 060508-TE	RE 0.8 BS 1.8	a_p ▶ 1.50 f_z ▶ 0.14	2.50 0.26	3.50 0.38	●	●	●		●								
WIPER		ODKT 060508-WU	RE 0.8 BS 6.4	a_p ▶ 0.50 f_z ▶ 0.08	1.00 0.16	1.50 0.24	●	●	▲										
ALUMINIUM		ODKT 060508-AL	RE 0.8 BS 1.8	a_p ▶ 0.50 f_z ▶ 0.10	2.00 0.22	3.50 0.35							●						


● stock standard, ▲ upcoming introduction




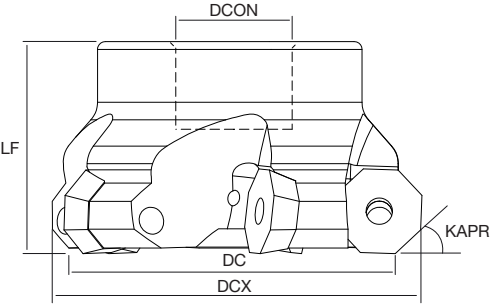
ARBOR




INTERNAL COOLANT







FACING



43°

P

M

K

N

S

OKTOPLUS - OD
Facing (KAPR 43°)

	DC	DCX	Z	DCON	LF	KG	MIID
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ARBOR	NT-OD06H	D050-F22-Z4	●	50	60	4	22	40	0.40	ODKT06 ODMT06
		D063-F22-Z5	●	63	73	5	22	40	0.60	
		D080-F27-Z6	●	80	90	6	27	50	1.10	
		D100-F32-Z7	●	100	110	7	32	50	1.60	
		D125-F40-Z8	●	125	135	8	40	63	2.70	
		D160-F40-Z10	●	160	170	10	40	63	4.20	

● stock standard

Spare Parts

INSERT SCREW



INSERT WRENCH



NT-OD06H D ₀₀₀	NT-ST021	NT-FTB20
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- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

SEHX	ISO Facing 45° - positive					ISO513	HC-PVD		HC-CVD		HW	HT												
	Size	IC	S	D1	AN		P	JP5520	JP8525	JP9525	JC7530	JC8530	JW6520	JW4525										
	12	12.70	4.76	5.50	20°		M	80 250	80 250	70 220		100 320	160 350	100 240	160 380	200 1000								
		GRADE APPLICATION AREA		Light cut, stable machining		+ Hardness		- Toughness		○		○												
		main application		Variable condition, general machining		- Hardness		+ Toughness		○		○												
		applicable		Heavy cut, unstable machining		+ Hardness		- Toughness		○		○												
SHARP	SC P M		SEHX	1204AFEN-SC	BS 2.5	a_p ▶ 0.50 f_z ▶ 0.08 2.00 0.15 3.50 0.22	●							●										
GENERAL	GP P M		SEHX	1204AFSN-GP	BS 1.8	a_p ▶ 1.00 f_z ▶ 0.10 2.50 0.20 4.00 0.30	●	●		●														
REINFORCED	Flat K		SEHX	1204AFSN	BS 1.8	a_p ▶ 1.50 f_z ▶ 0.20 3.00 0.30 4.50 0.40				●														
ALUMINIUM	AL N		SEHX	1204AFFN-AL	BS 2.5	a_p ▶ 0.50 f_z ▶ 0.10 2.50 0.22 4.50 0.35						●												
				polished surface																				

● stock standard



MILLING High Feed

HF4PLUS .224

TURNING	<h1>SPMT</h1> <p>4 edges</p>		<h2>HF4PLUS</h2> <p>High Feed - positive</p>					ISO513	HC-PVD													
									JPS520	JPS530	JP7525	JP9535										
									P	M	K	N	S	H								
THREADING	GRADE APPLICATION AREA		Light cut, stable machining			+ Hardness - Toughness																
	main application		Variable condition, general machining																			
	applicable		Heavy cut, unstable machining																			
GROOVING	SHARP	SC P M S	SPMT	07T210R-SC	RE1.0	a_p ▶ 0.20 f_p ▶ 0.50	0.80 0.90	1.40 1.30	●	●												
		GP P M K	SPMT	07T210R-GP	RE1.0	a_p ▶ 0.20 f_p ▶ 0.60	0.80 1.00	1.40 1.40	●	●	●											

● stock standard

MILLING

IMPORTANT NOTICE FOR CNC PROGRAMMING

	Rp THEORETICAL RADIUS FOR CNC PROGRAMMING	SPMT07T210	2.00
	K UNCUT PORTION		0.68

DRILLING

ACCESSORIES

SDMT	HF4PLUS					ISO513	HC-PVD																								
	Size	IC	S	D1	AN		JPS520	JPS530	JP7525	JP9535																					
<p>4 edges</p>	10	10.00	4.76	4.00	15°	P	80 250	60 230																							
	12	12.70	5.56	4.40	15°	M	60 160	60 150		60 200																					
							K			100 240																					
							N																								
							S				40 100																				
							H																								
GRADE APPLICATION AREA		Light cut, stable machining				+																									
■ main application		Variable condition, general machining				-																									
■ applicable		Heavy cut, unstable machining				+																									

	SC	P	M	S																								
SHARP		SDMT 100410R-SC	RE1.0	a_p ▶ 0.30 f_z ▶ 0.50	1.00	1.70	●	●																				
GENERAL		SDMT 100410R-GP	RE1.0	a_p ▶ 0.30 f_z ▶ 0.60	1.00	1.70	●	●	●																			
REINFORCED		SDMT 100410R-TE	RE1.0	a_p ▶ 0.30 f_z ▶ 0.70	1.00	1.70	●	●																				
		SDMT 120512R-GP	RE1.2	a_p ▶ 0.50 f_z ▶ 0.80	1.20	2.00	●	●	●	●																		
		SDMT 120512R-TE	RE1.2	a_p ▶ 0.50 f_z ▶ 1.00	1.20	2.00	●	●																				

● stock standard

IMPORTANT NOTICE FOR CNC PROGRAMMING

		SDMT100410	SDMT120512
	Rp THEORETICAL RADIUS FOR CNC PROGRAMMING	3.00	4.00
	K UNCUT PORTION	0.76	0.85

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

CYLINDRICAL

INTERNAL COOLANT

HIGH FEED

P M K

S

THREADING

SCREW-IN

INTERNAL COOLANT

GROOVING

ARBOR

INTERNAL COOLANT

MILLING

HF4PLUS High Feed	DCX		DCON	LF	LU	CRKS		MIID
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DRILLING

				DCX	Z	DCON	LF	LU	CRKS	KG	MIID
CYLINDRICAL	NT-SP07HF	D020-S20-Z3	●	20	3	20	130	50	-	0.30	SPMT07
		D025-S25-Z4	●	25	4	25	140	60	-	0.50	
		D032-S32-Z5	●	32	5	32	150	70	-	1.00	
SCREW-IN	NT-SP07HF	D020-M10-Z2	●	20	2	10.5	30	-	M10	0.10	SPMT07
		D020-M10-Z3	●		3	10.5	30	-	M10	0.10	
		D025-M12-Z3	●	25	3	12.5	35	-	M12	0.15	
		D025-M12-Z4	●		4	12.5	35	-	M12	0.15	
		D032-M16-Z4	●	32	4	17	40	-	M16	0.30	
		D032-M16-Z5	●		5	17	40	-	M16	0.30	
		D035-M16-Z5	●	35	5	17	40	-	M16	0.30	
		D042-M16-Z6	●	42	6	17	40	-	M16	0.35	
	NT-SD10HF	D035-M16-Z4	●	35	4	17	40	-	M16	0.30	SDMT10
		D042-M16-Z5	●	42	5	17	40	-	M16	0.35	
NT-SD12HF	D032-M16-Z2	●	32	2	17	43	-	M16	0.25	SDMT12	
	D035-M16-Z3	●	35	3	17	43	-	M16	0.25		
	D040-M16-Z4	●	40	4	17	43	-	M16	0.25		
	D042-M16-Z4	●	42	4	17	43	-	M16	0.25		
ARBOR	NT-SP07HF	D040-F16-Z5	●	40	5	16	40	-	-	0.25	SPMT07
		D040-F16-Z6	●		6	16	40	-	-	0.25	
	D042-F16-Z5	●	42	5	16	40	-	-	0.25		
	D042-F16-Z6	●		6	16	40	-	-	0.25		
	D050-F22-Z7	●	50	7	22	50	-	-	0.55		
	D052-F22-Z7	●	52	7	22	50	-	-	0.55		

● stock standard

HF4PLUS High Feed				DCX		DCON	LF	LU	CRKS		MIID
ARBOR	NT-SD10HF	D050-F22-Z6	●	50	6	22	50	-	-	0.55	SDMT10
		D052-F22-Z6	●	52	6	22	50	-	-	0.55	
		D063-F27-Z7	●	63	7	27	50	-	-	0.75	
		D066-F27-Z7	●	66	7	27	50	-	-	0.80	
		D080-F27-Z8	●	80	8	27	50	-	-	1.10	
	NT-SD12HF	D042-F16-Z4	●	42	4	16	40	-	-	0.25	SDMT12
		D050-F22-Z4	●	50	4	22	50	-	-	0.45	
		D050-F22-Z5	●		5	22	50	-	-	0.45	
		D052-F22-Z4	●	52	4	22	50	-	-	0.45	
		D052-F22-Z5	●		5	22	50	-	-	0.45	
		D063-F22-Z4	●	63	4	22	50	-	-	0.70	
		D063-F27-Z4	●		4	27	50	-	-	0.70	
		D063-F22-Z5	●		5	22	50	-	-	0.70	
		D063-F27-Z5	●		5	27	50	-	-	0.70	
		D066-F27-Z6	●		66	6	27	50	-	-	
		D080-F27-Z6	●	80	6	27	50	-	-	1.10	
		D080-F27-Z7	●		7	27	50	-	-	1.10	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-SP07HF DCX ≤ 25	NT-ST034	NT-FTB10
NT-SP07HF DCX > 25	NT-ST033	
NT-SD10HF D□□□	NT-ST036	NT-FTB15
NT-SD12HF D□□□	NT-ST024	NT-FTB15

TURNING

THREADING

GROOVING

MILLING

DRILLING


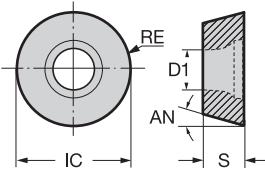















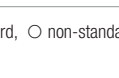
ACCESSORIES



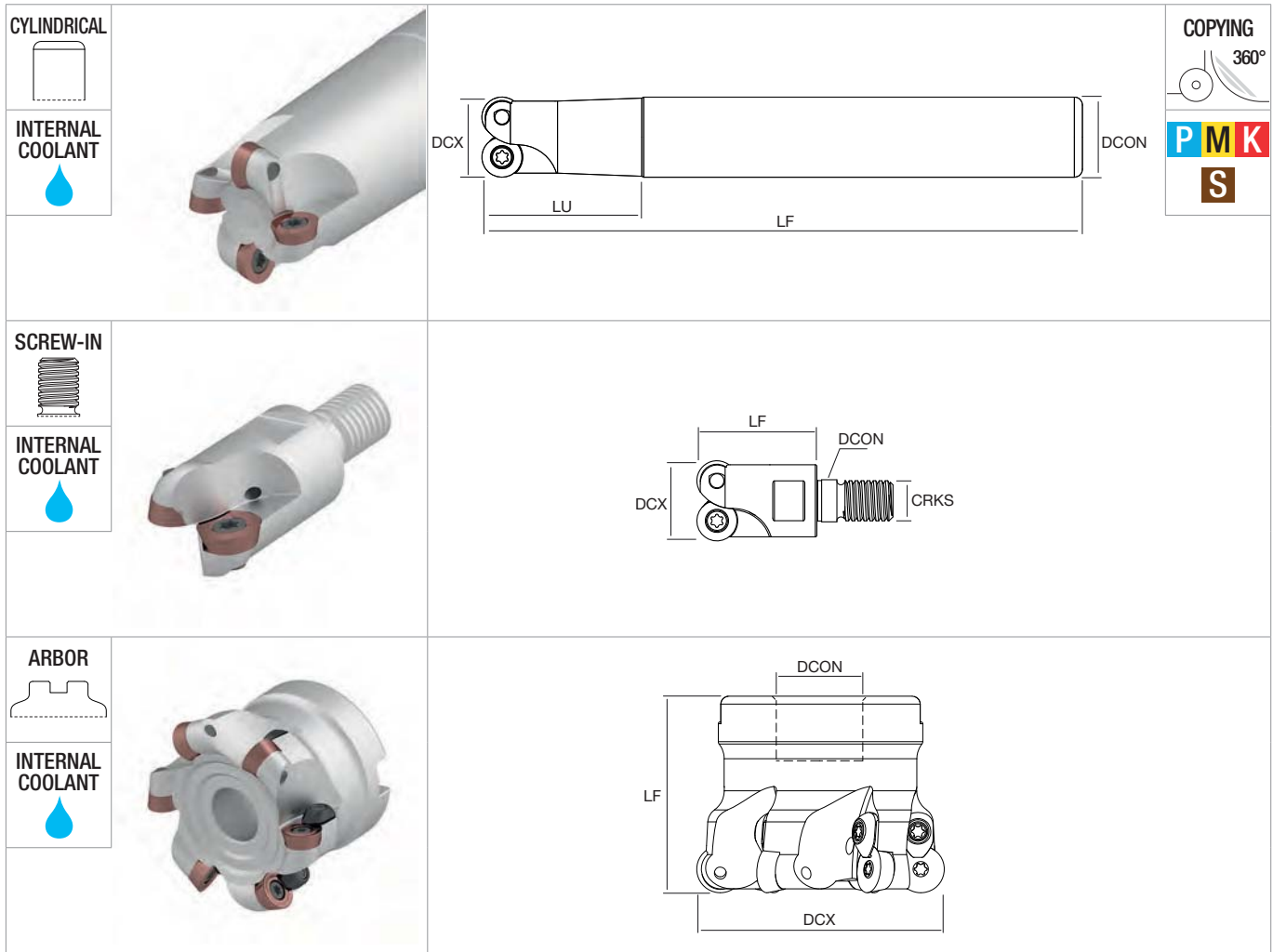
MILLING Copying

ROUNDPLUS .230

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

		ROUNDPLUS Copying - positive					ISO513	HC-PVD				HT											
								JP5520	JP5530	JP7525	JP9535	JU4525											
	Size	IC	S	D1	AN	P	80	60			160												
							250	230			350												
	05	5.00	1.51	2.20	15°	M	60	60		60	100												
							160	150		200	240												
	07	7.00	2.38	2.80	15°	K			100		160												
									240		380												
10	10.00	3.18	3.80	15°	N																		
12	12.00	4.76	4.40	15°	S																		
16	16.00	4.76	5.00	15°	H																		
GRADE APPLICATION AREA		Light cut, stable machining					+ - +																
main application		Variable condition, general machining																					
applicable		Heavy cut, unstable machining																					
SHARP			RDET	1003M0-SC	RE 5.0	a_p	0.50	2.00	3.50	▽	▽												
						f_z	0.10	0.22	0.34														
				1204M0-SC	RE 6.0	a_p	0.50	2.50	4.50	●	●												
				f_z	0.15	0.30	0.45																
	1604M0-SC	RE 8.0	a_p	1.00	3.00	5.00	●	●															
				f_z	0.22	0.44	0.62																
GENERAL			RDET	1003M0-GP	RE 5.0	a_p	0.50	2.00	3.50	●	●	●											
						f_z	0.12	0.25	0.38														
				1204M0-GP	RE 6.0	a_p	0.50	2.50	4.50	●	●	●											
						f_z	0.18	0.35	0.52														
	1604M0-GP	RE 8.0	a_p	1.00	3.00	5.00	●	●	●														
				f_z	0.25	0.45	0.65																
	RDMT 1204M0-GP	RE 6.0	a_p	0.50	2.50	4.50	●	●															
				f_z	0.18	0.35	0.52																
REINFORCED			RDEW	0501M0-TES	RE 2.5	a_p	0.30	1.00	1.70	●	●	●	○										
						f_z	0.08	0.15	0.22														
		0702M0-TES	RE 3.5	a_p	0.30	1.50	2.70	●		○	▽												
					f_z	0.08	0.16	0.24															
			RDEW	0702M0-TE	RE 3.5	a_p	0.30	1.50	2.70	●	●	●											
						f_z	0.08	0.19	0.30														
				1003M0-TE	RE 5.0	a_p	0.50	2.00	3.50	●	●	●											
						f_z	0.14	0.27	0.40														
		1204M0-TE	RE 6.0	a_p	0.50	2.50	4.50	●	●	●													
					f_z	0.20	0.40	0.60															
	1604M0-TE	RE 8.0	a_p	1.00	3.00	5.00	●	●	●														
				f_z	0.30	0.50	0.70																
	RDMW	1604M0-TE	RE 8.0	a_p	1.00	3.00	5.00	●	●														
				f_z	0.30	0.50	0.70																
		RDEW	1204M0-TE-D6	RE 6.0	a_p	0.50	2.50	4.50	●	●													
					f_z	0.20	0.40	0.60															
		RDMW	1204M0-TE-D6	RE 6.0	a_p	0.50	2.50	4.50	●														
					f_z	0.20	0.40	0.60															
		RDEW	1204M0-TE-D8	RE 6.0	a_p	0.50	2.50	4.50	●	●													
						f_z	0.20	0.40	0.60														
		RDMW	1204M0-TE-D8	RE 6.0	a_p	0.50	2.50	4.50	○	●													
					f_z	0.20	0.40	0.60															

● stock standard, ○ non-standard stock, ▽ stock exhaustion



TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

ROUNDPLUS - RD Copying			DCX	\varnothing	DCON	LF	LU	CRKS	KG	MIID
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CYLINDRICAL	NT-RD05H	D009-S08-Z2-L100	●*	9	2	8	100	12	-	0.10	RDEW05
		D010-S10-Z2-L100	●	10	2	10	100	18	-	0.10	
		D011-S10-Z2-L100	●*	11	2	10	100	15	-	0.10	
		D012-S12-Z3-L100	●	12	3	12	100	22	-	0.10	
		D013-S12-Z3-L100	●*	13	3	12	100	18	-	0.10	
		D016-S16-Z4-L150	●*	16	4	16	150	30	-	0.25	
		D017-S16-Z4-L150	●*	17	4	16	150	20	-	0.25	
	NT-RD07H	D016-S16-Z2-L150	●	16	2	16	150	25	-	0.25	RDEW07
		D017-S16-Z2-L150	●	17	2	16	150	20	-	0.25	
		D020-S20-Z3-L150	●*	20	3	20	150	35	-	0.40	
		D021-S20-Z3-L150	●*	21	3	20	150	25	-	0.40	
		D025-S25-Z5-L150	●*	25	5	25	150	40	-	0.60	
		D026-S25-Z5-L150	●*	26	5	25	150	25	-	0.60	
		D035-S32-Z6-L150	●*	35	6	32	150	30	-	1.00	
	NT-RD10H	D020-S20-Z2-L150	●	20	2	20	150	40	-	0.35	RDET10 RDEW10
		D021-S20-Z2-L150	●	21	2	20	150	25	-	0.35	
		D025-S25-Z3-L150	●	25	3	25	150	40	-	0.55	
		D026-S25-Z3-L150	●*	26	3	25	150	25	-	0.55	
		D030-S25-Z3-L150	●*	30	3	25	150	25	-	0.60	
		D032-S32-Z3-L150	●	32	3	32	150	40	-	0.90	
		D035-S32-Z4-L150	●*	35	4	32	150	35	-	0.90	

● stock standard



ITEMS MARKED WITH *

We will continue to supply the equivalent milling cutters without coolant holes until stock exhaustion

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

ROUNDPLUS - RD Copying				DCX		DCON	LF	LU	CRKS		MIID
SCREW-IN	NT-RD05H	D012-M06-Z2	●*	12	2	6.5	18	-	M6	0.10	RDEW05
		D012-M06-Z3	●*		3	6.5	18	-	M6	0.10	
		D013-M06-Z2	●*	13	2	6.5	18	-	M6	0.10	
		D013-M06-Z3	●*		3	6.5	18	-	M6	0.10	
		D016-M08-Z4	●*	16	4	8.5	23	-	M8	0.10	
		D017-M08-Z4	●*	17	4	8.5	23	-	M8	0.10	
	NT-RD07H	D016-M08-Z2	●*	16	2	8.5	23	-	M8	0.10	RDEW07
		D016-M08-Z3	●*		3	8.5	23	-	M8	0.10	
		D017-M08-Z2	●*	17	2	8.5	23	-	M8	0.10	
		D017-M08-Z3	●*		3	8.5	23	-	M8	0.10	
		D020-M10-Z3	●	20	3	10.5	30	-	M10	0.10	
		D021-M10-Z2	●*	21	2	10.5	30	-	M10	0.10	
D021-M10-Z3		●*	3		10.5	30	-	M10	0.10		
D025-M12-Z4		●	25	4	12.5	35	-	M12	0.15		
D025-M12-Z5		●*		5	12.5	35	-	M12	0.15		
D026-M12-Z4		●*	26	4	12.5	35	-	M12	0.15		
D026-M12-Z5		●*		5	12.5	35	-	M12	0.15		
D035-M16-Z5		●*	35	5	17	43	-	M16	0.25		
D035-M16-Z6	●*	6		17	43	-	M16	0.25			
NT-RD10H	D020-M10-Z2	●	20	2	10.5	30	-	M10	0.10	RDET10 RDEW10	
	D021-M10-Z2	●*	21	2	10.5	30	-	M12	0.10		
	D025-M12-Z3	●	25	3	12.5	35	-	M12	0.15		
	D026-M12-Z3	●*	26	3	12.5	35	-	M12	0.15		
	D030-M12-Z3	●*	30	3	12.5	35	-	M12	0.20		
	D032-M16-Z3	●	32	3	17	43	-	M16	0.20		
	D035-M16-Z3	●	35	3	17	43	-	M16	0.25		
	D035-M16-Z4	●		4	17	43	-	M16	0.25		
	D040-M16-Z4	●	40	4	17	43	-	M16	0.30		
ARBOR	NT-RD10H	D042-F16-Z5	●	42	5	16	40	-	-	0.25	RDET10 RDEW10
		D052-F22-Z6	●	52	6	22	40	-	-	0.45	
	NT-RD12H	D042-F16-Z4	●	42	4	16	50	-	-	0.30	RDET12 RDEW12 RDMT12 RDMW12
		D050-F22-Z4	●*	50	4	22	50	-	-	0.40	
		D050-F22-Z5	●		5	22	50	-	-	0.40	
		D052-F22-Z4	●	52	4	22	50	-	-	0.45	
		D052-F22-Z5	●		5	22	50	-	-	0.45	
		D063-F22-Z5	●	63	5	22	50	-	-	0.65	
		D063-F22-Z6	●		6	22	50	-	-	0.65	
		D066-F22-Z6	●	66	6	22	50	-	-	0.80	
	NT-RD16H	D080-F27-Z6	▽*	80	6	27	50	-	-	1.00	RDET16 RDEW16 RDMW16
		D080-F27-Z7	●		7	27	50	-	-	1.00	
D063-F22-Z5		●	63	5	22	50	-	-	0.60		
D066-F22-Z5		▽*	66	5	22	50	-	-	0.60		
D066-F27-Z5		●		5	27	50	-	-	0.60		
D080-F27-Z5		●	80	5	27	50	-	-	0.90		
D080-F27-Z6	●	6		27	50	-	-	0.90			
D100-F32-Z7	●	100	7	32	50	-	-	1.60			
D125-F40-Z8	●	125	8	40	63	-	-	2.90			

● stock standard, ▽ stock exhaustion



ITEMS MARKED WITH *

We will continue to supply the equivalent milling cutters without coolant holes until stock exhaustion

Spare Parts	CLAMP SET	INSERT SCREW	INSERT WRENCH
NT-RD05H DCX ≤ 10	-	NT-ST026	NT-FTB06
NT-RD05H DCX > 10	-	NT-ST009	
NT-RD07H D ₀₀₀	-	NT-ST018	NT-FTB08
NT-RD10H D ₀₀₀ DCX ≤ 26	-	NT-ST012	NT-FTB15
NT-RD10H D ₀₀₀ DCX = 30		NT-ST013	
NT-RD10H D ₀₀₀ DCX ≥ 32			
NT-RD12H D ₀₀₀	NT-CS014	NT-ST017	NT-FTB15
NT-RD16H D ₀₀₀	NT-CS021	NT-ST023	NT-FTB20

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

TURNING


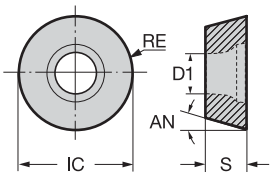











THREADING

GROOVING

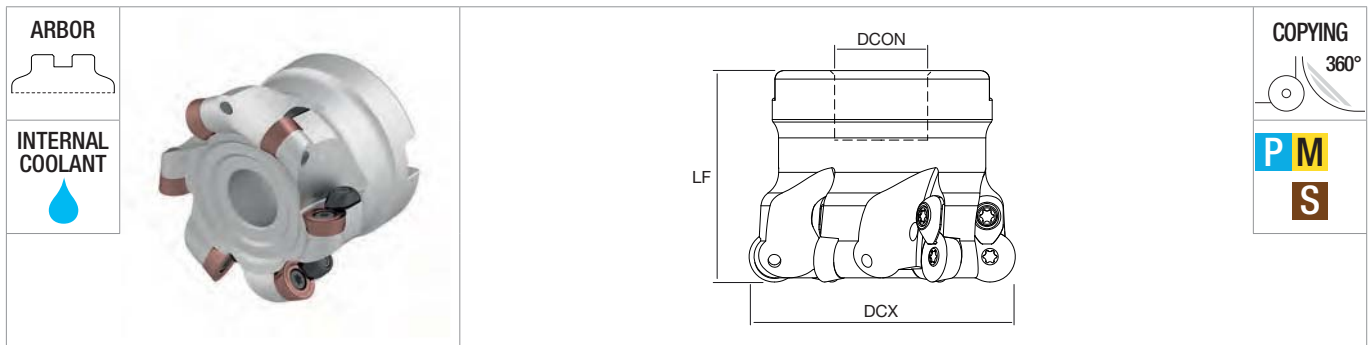
MILLING

DRILLING

ACCESSORIES

		ROUNDPLUS Copying					ISO513	HC-PVD																	
								JPS520	JPS530	JPS535															
	Size	IC	S	D1	AN	P	80 250	60 230																	
	12	12.00	4.76	4.40	11°	M	60 160	60 150	60 200																
							K																		
							N																		
							S			40 100															
							H																		
GRADE APPLICATION AREA		Light cut, stable machining					+																		
	main application		Variable condition, general machining					-																	
	applicable		Heavy cut, unstable machining					+																	
SHARP			RPET	1204M0-SC	RE 6.0	a_p ▶ 0.50 f_z ▶ 0.15	2.50	4.50	4.50	0.45	●	●													
	GENERAL			RPET	1204M0-GP	RE 6.0	a_p ▶ 0.50 f_z ▶ 0.18	2.50	4.50	0.52	0.35	●	●	●											
RPMT				1204M0-GP	RE 6.0	a_p ▶ 0.50 f_z ▶ 0.18	2.50	4.50	0.52	0.35	●	●													
REINFORCED			RPEW	1204M0-TE	RE 6.0	a_p ▶ 0.50 f_z ▶ 0.20	2.50	4.50	0.60	0.40	○	●													
			RPMW	1204M0-TE	RE 6.0	a_p ▶ 0.50 f_z ▶ 0.20	2.50	4.50	0.60	0.40	●	●													

● stock standard, ○ non-standard stock



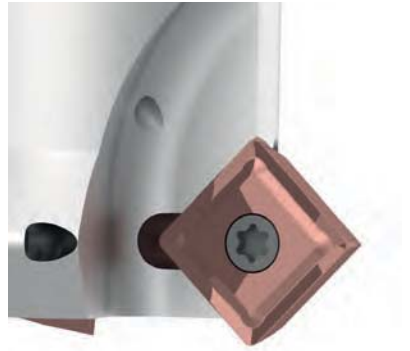
ARBOR	INTERNAL COOLANT	ROUNDPLUS - RP Copying	DCX		DCON	LF		MIID		

ARBOR	NT-RP12H	D042-F16-Z4	●	42	4	16	50	0.30	RPET12 RPEW12 RPMT12 RPMW12		
		D050-F22-Z5	●	50	5	22	50	0.45			
		D052-F22-Z5	●	52	5	22	50	0.50			
		D063-F22-Z6	●	63	6	22	50	0.70			
		D066-F22-Z6	●	66	6	22	50	0.80			
		D080-F27-Z7	●	80	7	27	50	1.00			

● stock standard

Spare Parts	CLAMP SET	INSERT SCREW	INSERT WRENCH
NT-RP12H D000	NT-CS013	NT-ST017	NT-FTB15

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES



MILLING Chamfering

CHAMFERSQUARE .238

TURNING

THREADING

GROOVING




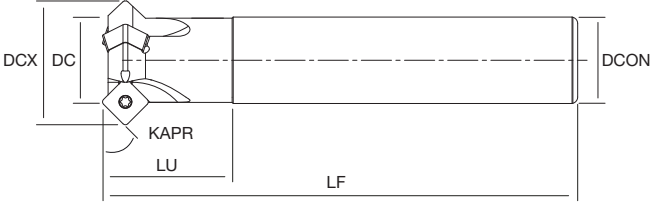




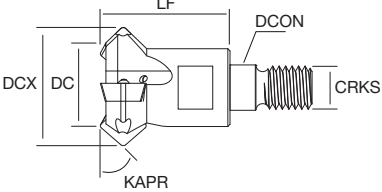


MILLING


DRILLING

ACCESSORIES

SP_□X		CHAMFERSQUARE Chamfering					ISO513	HC-PVD			HW										
								JPS5625	JPS530	JPS635	JW6520										
	Size	IC	S	D1	AN	P	80 250	60 230													
	05	5.00	2.38	2.50	11°	M	60 160	60 150	60 200												
	07	7.94	3.97	2.80	11°	K	80 200														
	09	9.80	4.30	4.10	11°	N				200 1000											
						S			40 100												
GRADE APPLICATION AREA		Light cut, stable machining				+															
main application		Variable condition, general machining				-															
applicable		Heavy cut, unstable machining				+															
GENERAL	GP P M K S	SPMX 050204-GP	RE 0.4	f_2 ▶ 0.08	0.10	0.12	●	●	●												
		SPMX 07T308-GP	RE 0.8	f_2 ▶ 0.10	0.15	0.20	●	●	●												
		SPMX 090408-GP	RE 0.8	f_2 ▶ 0.10	0.20	0.30	●	●	●												
ALUMINIUM	AL N	SPGX 050204-AL	RE 0.4	f_2 ▶ 0.08	0.10	0.12				●											
		SPGX 07T308-AL	RE 0.8	f_2 ▶ 0.10	0.15	0.20				●											
		SPGX 090408-AL	RE 0.8	f_2 ▶ 0.10	0.20	0.30				●											

● stock standard

<p>CYLINDRICAL</p>  <p>INTERNAL COOLANT</p> 			<p>CHAMFERING</p>  <p>PMK NS</p>						
<p>SCREW-IN</p>  <p>INTERNAL COOLANT</p> 									
<p>CHAMFERSQUARE Chamfering (KAPR 45°)</p>		DC	DCX		DCON	LF	LU (CRKS)		MID

			DC	DCX		DCON	LF	LU (CRKS)		
CYLINDRICAL	NT-CHS45	D12/19-S12-Z3-05	●	12	19	3	12	80	20	
		D16/22-S16-Z4-05	●	16	22	4	16	100	25	SP=X05
		D20/30-S20-Z3-07	●	20	30	3	20	110	30	SP=X07
		D25/37-S25-Z3-09	●	25	37	3	25	120	35	
		D32/44-S32-Z4-09	●	32	44	4	32	130	40	SP=X09
SCREW-IN	NT-CHS45	D12/19-M06-Z3-05	●	12	19	3	6.5	20	(M6)	SP=X05
		D16/22-M08-Z4-05	●	16	22	4	8.5	25	(M8)	
		D20/30-M10-Z3-07	●	20	30	3	10.5	30	(M10)	SP=X07
		D25/37-M12-Z3-09	●	25	37	3	12.5	35	(M12)	
		D32/44-M16-Z4-09	●	32	44	4	17	40	(M16)	SP=X09

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		

NT-CHS45 D12/19-S12-Z3-05	NT-ST059N	NT-FTB06
NT-CHS45 D16/22-S16-Z4-05		
NT-CHS45 D20/30-S20-Z3-07	NT-ST062N	NT-FTB07
NT-CHS45 D25/37-S25-Z3-09	NT-ST063N	NT-FTB15
NT-CHS45 D32/44-S32-Z4-09		
NT-CHS45 D12/19-M06-Z3-05	NT-ST059N	NT-FTB06
NT-CHS45 D16/22-M08-Z4-05		
NT-CHS45 D20/30-M10-Z3-07	NT-ST062N	NT-FTB07
NT-CHS45 D25/37-M12-Z3-09	NT-ST063N	NT-FTB15
NT-CHS45 D32/44-M16-Z4-09		

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



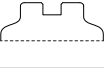
MILLING Advanced


- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

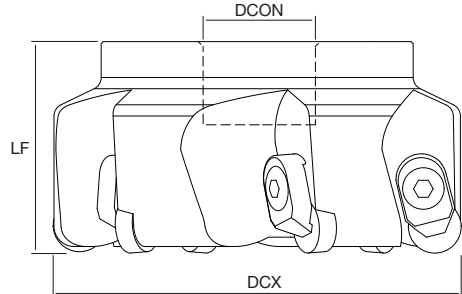
<h1 style="font-size: 2em; margin: 0;">RN</h1>		<h2 style="margin: 0;">CERAMIC - PCBN</h2> <p style="margin: 0;">Negative</p>				ISO513	CN		BH												
							NSA6000	NBH500C	NBH900U	NBH950U											
	Size	IC	S			P															
	120400	12.70	4.76			M															
	120700	12.70	7.94			K	800 2000	800 1500	600 1000												
							N														
							S	800 1200													
							H	150 300	100 250	80 180											
GRADE APPLICATION AREA		Light cut, stable machining			+	-															
■ main application		Variable condition, general machining			-	+															
■ applicable		Heavy cut, unstable machining			-	+															
CERAMIC	T01020 S	RNGN 120400-CC	-	a _p ▶ 0.50 f _z ▶ 0.06	1.50 0.15	2.50 0.24	●														
	RNGN 120700-CC	-	a _p ▶ 0.50 f _z ▶ 0.06	1.50 0.15	2.50 0.24	●															
PCBN	UE H	RNGN 120400S-UE	-	a _p ▶ 0.20 f _z ▶ 0.05	0.50 0.10	1.00 0.15	● ● ●														
	solid																				

● stock standard


ARBOR









FACING
360°



S H

ROUND ADVANCED

	DCX		DCON	LF	 KG	MIID		
--	-----	---	------	----	--	------	--	--

ARBOR											
	NT-RN12	D050-F22-Z4	●	50	4	22	50	0.50	RNGN1204		
	D063-F22-Z4	●	63	4	22	50	0.70				
	D080-F27-Z5	●	80	5	27	50	1.20				
	D100-F32-Z6	●	100	6	32	50	1.60				
NT-RN12X	D050-F22-Z4	●	50	4	22	50	0.50	RNGN1207			
	D063-F22-Z4	●	63	4	22	50	0.70				
	D080-F27-Z5	●	80	5	27	50	1.20				
	D100-F32-Z6	●	100	6	32	50	1.60				

● stock standard

	CLAMP	CLAMP SCREW	SPRING	WRENCH
Spare Parts				
NT-RN12 D□□□	NT-CS028	NT-ST028	NT-SG028	NT-WR030

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

THREADING

GROOVING

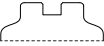

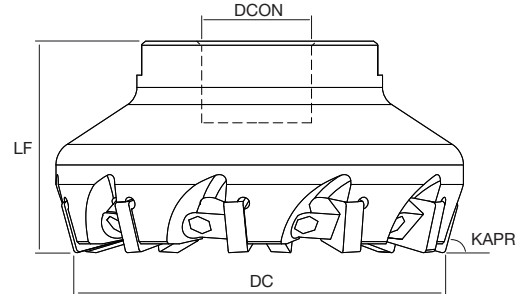



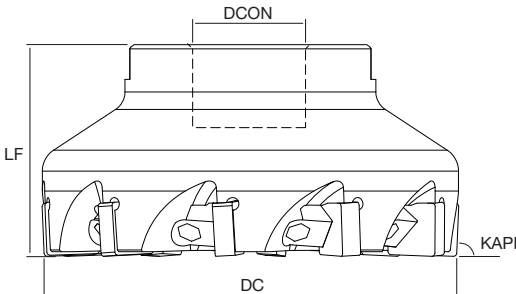



MILLING

DRILLING

ACCESSORIES

SN	GERAMIC - PCBN Negative				ISO513	CM	CN	BH															
	Size	IC	S			MAC200	NSM400	NSM450	NBH550U	NBH900U													
					P																		
	12	12.70	4.76		M																		
					K	300 600	600 1200	500 1000	800 2000	800 1500													
					N																		
					S																		
					H																		
GRADE APPLICATION AREA	Light cut, stable machining				+																		
main application	Variable condition, general machining				-																		
applicable	Heavy cut, unstable machining																						
CERAMIC	T02020 K	SNGN 120412-GP	RE 1.2	Roughing $f_z \blacktriangleright$ 0.15	$a_p \blacktriangleright$ >1.00 0.20	0.25																	
		SNMN 120416-GP	RE 1.6	Roughing $f_z \blacktriangleright$ 0.15	$a_p \blacktriangleright$ >1.00 0.20	0.25																	
	T02020 K	SNXN 1204EN	BS 1.4	Finishing $f_z \blacktriangleright$ 0.05	$a_p \blacktriangleright$ <1.00 0.10	0.15																	
	only for 75° milling cutter			Roughing $f_z \blacktriangleright$ 0.10	$a_p \blacktriangleright$ >1.00 0.20	0.30																	
	T02020 K	SNXN 1204HN	BS 1.8	Finishing $f_z \blacktriangleright$ 0.06	$a_p \blacktriangleright$ <1.00 0.08	0.10																	
only for 88° milling cutter			Roughing $f_z \blacktriangleright$ 0.10	$a_p \blacktriangleright$ >1.00 0.15	0.20																		
S02020 K	SNGX 120412-GS	RE 1.2	Roughing $f_z \blacktriangleright$ 0.10	$a_p \blacktriangleright$ >1.00 0.15	0.20																		
chip breaker, low cutting force																							
PCBN	UE K	SNGN 120412S-UE	RE 1.2	Roughing $f_z \blacktriangleright$ 0.15	$a_p \blacktriangleright$ >1.00 0.20	0.25																	
	solid																						
	EN K	SNXN 1204EN	BS 1.4	Finishing $f_z \blacktriangleright$ 0.05	$a_p \blacktriangleright$ <1.00 0.10	0.15																	
only for 75° milling cutter			Roughing $f_z \blacktriangleright$ 0.10	$a_p \blacktriangleright$ >1.00 0.20	0.30																		
HN K	SNXN 1204HN	BS 1.8	Finishing $f_z \blacktriangleright$ 0.06	$a_p \blacktriangleright$ <1.00 0.08	0.10																		
only for 88° milling cutter			Roughing $f_z \blacktriangleright$ 0.10	$a_p \blacktriangleright$ >1.00 0.15	0.20																		

● stock standard

<p>ARBOR</p> 			<p>FACING</p>  <p>75°</p> <p>K</p>						
<p>ARBOR</p> 			<p>FACING</p>  <p>88°</p> <p>K</p>						
<p>SQUARE ADVANCED (KAPR 75° and 88°)</p>		<p>DC</p>		<p>DCON</p>	<p>LF</p>		<p>MIID</p>		

	NT-SN12-75°	D050-F22-Z5	●	50	5	22	40	0.50				
75°		D063-F22-Z6	●	63	6	22	40	0.70	SNGN12 SNGX12 SNMN12 SNXN12			
		D080-F27-Z8	●	80	8	27	50	1.40				
		D100-F32-Z10	●	100	10	32	50	1.80				
		D125-F40-Z12	●	125	12	40	63	4.00				
		NT-SN12-88°	D063-F22-Z6	●	63	6	22	40		0.70	SNGN12 SNGX12 SNMN12 SNXN12	
88°		D080-F27-Z8	●	80	8	27	50	1.40				
		D100-F32-Z10	●	100	10	32	50	1.80				
		D125-F40-Z12	●	125	12	40	63	4.00				

● stock standard

Spare Parts	WEDGE	WEDGE SCREW	WRENCH
			
NT-SN12 D□□□	NT-WD070	NT-SC060	NT-WR030

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

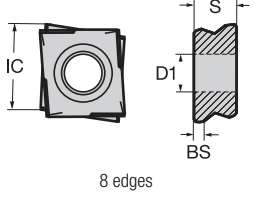

THREADING

GROOVING

MILLING

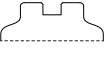

DRILLING

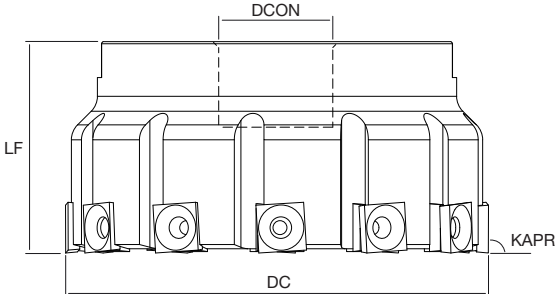
ACCESSORIES

<h1 style="font-size: 2em; margin: 0;">SP</h1>  <p style="font-size: 0.8em; margin-top: 5px;">8 edges</p>	<h2 style="margin: 0;">CERAMIC</h2> <p style="margin: 0;">Tangential</p>				ISO513 CN NSM350 NSM400															
	Size	IC	S	D1	P															
	12	11.70	5.50	5.10	M															
					K	600 1200	600 1200													
					N															
					S															
					H															
GRADE APPLICATION AREA		Light cut, stable machining			+	-	○	□												
■ main application	Variable condition, general machining			-	+	○	□	■												
■ applicable	Heavy cut, unstable machining			-	+	○	□	■												
CERAMIC	GP K 		SPHX	1205PCTR-GP	BS 0.7	Finishing a_p ▶ <1.00 f_z ▶ 0.08 0.15 0.22	Roughing a_p ▶ >1.00 f_z ▶ 0.10 0.20 0.30	● ●												


● stock standard

ARBOR





TANGENTIAL



90°

K

TANGENTIAL ADVANCED
(KAPR 90°)

	DC		DCON	LF		MIID		
--	----	---	------	----	---	------	--	--

ARBOR	NT-SP12-TAN	D050-F22-Z5	●	50	5	22	50	0.40	SPHX12			
			D063-F22-Z7	●	63	7	22	50		0.60		
			D080-F27-Z8	●	80	8	27	50		1.20		
			D100-F32-Z12	●	100	12	32	50		2.00		
			D125-F40-Z15	●	125	15	40	50		3.40		

● stock standard

Spare Parts

INSERT SCREW



INSERT WRENCH



NT-SP12 D □□□	NT-ST027	NT-FTB15
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- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

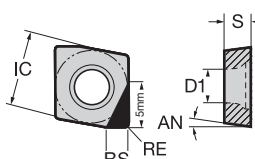


THREADING

GROOVING

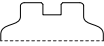

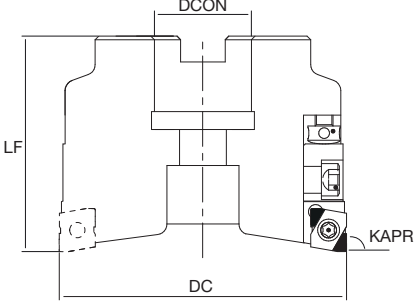



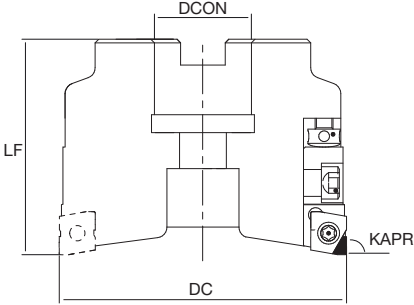


MILLING

DRILLING

ACCESSORIES

XP		DIAMOND - PCBN					ISO513	DP												
		Positive						ND120	ND150	NBR450U	BH									
 <p>DIAMOND 1 edge - PCBN 2 edges</p>	Size	IC	S	D1	AN	P														
	08	7.91	2.38	3.60	11°	M														
						K			600 1000											
						N			500 500 2000 2500											
						S														
					H			80 200												
GRADE APPLICATION AREA		Light cut, stable machining					+													
■ main application		Variable condition, general machining					-													
■ applicable		Heavy cut, unstable machining					+													
DIAMOND	SLANT TIP N	 <p>tip with carbide backed, tip angle: 3°</p>	XPGT	080204F-1C	RE 0.4 BS 2.5	a_p ▶ 0.50 f_z ▶ 0.05	2.00 0.15	3.50 0.25	●	●										
			080208F-1C	RE 0.8 BS 2.5	a_p ▶ 0.50 f_z ▶ 0.05	2.00 0.15	3.50 0.25	●	●											
PCBN	FLAT TIP K	 <p>tip with carbide backed</p>	XPGW	080204S-UE-2C	RE 0.4 BS 2.5	a_p ▶ 0.50 f_z ▶ 0.05	1.00 0.10	1.50 0.15		●										
			080208S-UE-2C	RE 0.8 BS 2.5	a_p ▶ 0.50 f_z ▶ 0.05	1.00 0.10	1.50 0.15		●											

● stock standard

<p>ARBOR</p> 			<p>FACING</p>  <p>K</p>					
<p>STEEL BODY</p>								
<p>ARBOR</p> 			<p>FACING</p>  <p>N</p>					
<p>ALUMINIUM BODY</p>								
<p>ADJUSTABLE ADVANCED (KAPR 90°)</p>		<p>DC</p> 	<p>DCON</p>	<p>LF</p>	<p>KG</p>	<p>MIID</p>		

STEEL BODY	NT-XP08	D050-F16-Z5-ST	●	50	5	16	50	XPGW08		
		D063-F22-Z6-ST	●	63	6	22	50			
		D080-F27-Z7-ST	●	80	7	27	50			
		D100-F32-Z8-ST	●	100	8	32	50			
ALU BODY	NT-XP08	D063-F22-Z5-AL	●	63	5	22	50	XPGT08		
		D080-F27-Z7-AL	●	80	7	27	50			
		D100-F32-Z8-AL	●	100	8	32	50			
		D125-F40-Z10-AL	●	125	10	40	63			

● stock standard

Spare Parts	CARTRIDGE	CARTRIDGE SCREW	CARTRIDGE WRENCH	ADJUSTING SCREW	CHIP COVER	COVER SCREW	INSERT SCREW	INSERT WRENCH
								
NT-XP08 D ₀₀₀ -F ₀₀ -Z ₀₀ -ST	NT-CRD-XP08	NT-CW040	NT-WR040	NT-AD040	-	-	NT-ST075	NT-FTB09
NT-XP08 D ₀₀₀ -F ₀₀ -Z ₀₀ -AL					NT-CH030	NT-ST064		

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

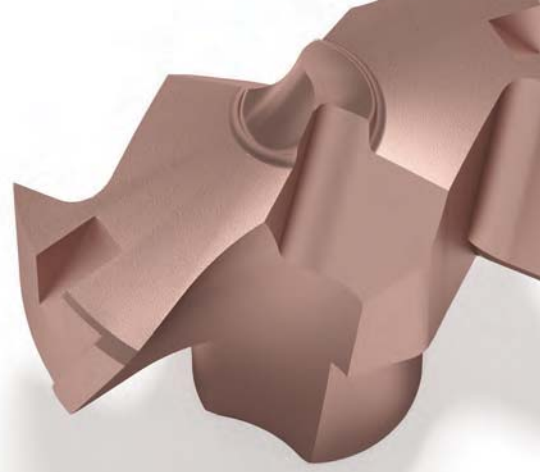


DRILLING

- DEXdrill .253
- DRSdrill .261
- DRSpilot .271
- SPOTdrill .277



DRILLING DEXdrill



DEXDRILL

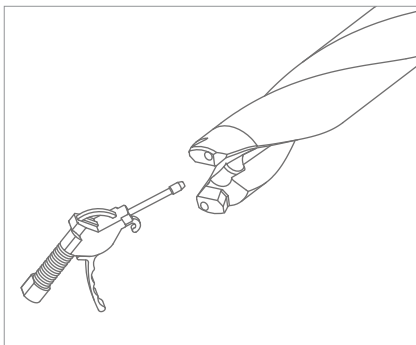
3XD
5XD

High performance drilling system with interchangeable heads

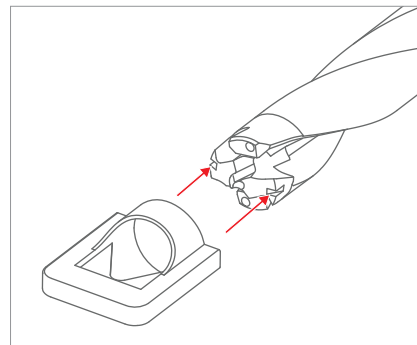
1. Where is DEXdrill applicable?

PLAIN SURFACE	CONCAVE SURFACE	STACKED PLATES	PIPES	SLANT SURFACE	HALF HOLE	HOLE EXPANSION

2. Drilling heads installation

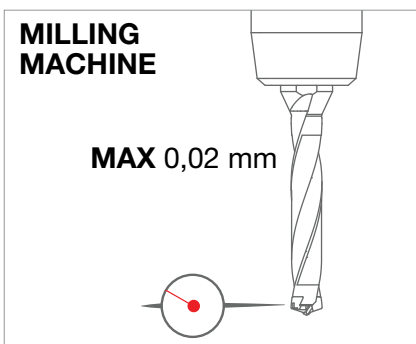


Clean pocket
with air blast.
Put insert into
drill holder.



Set wrench into
slots on insert
flanks.
Slowly turn
the wrench
clockwise until
stop.

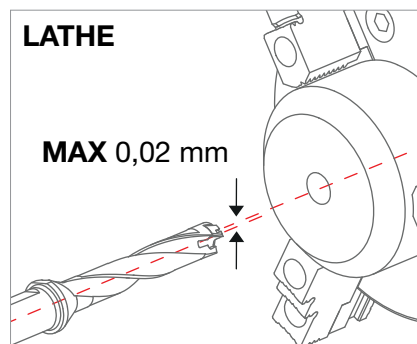
3. Operation recommendations



**MILLING
MACHINE**

MAX 0,02 mm

Center of
arbor deviation
must be under
0.02mm



LATHE

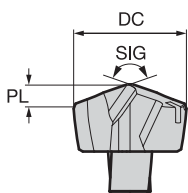
MAX 0,02 mm

Keep under
0.02mm
the maximum
deviation
between drill
and workpiece

TURNING

DEX

Self-locking drilling head



THREADING

- ISO513
- HC-PVD
- JPS625
- JP7625

GRADE APPLICATION AREA	Stable machining	+ Hardness - Toughness		
	General machining			
	Unstable machining			

GROOVING

MILLING

GENERAL



GP	P	K	DC	PL	f _n	ap	a _{max}	applied	...									
			DC 14.80	DEX1480-GP	PL 2.69	f _n	0.16	0.22	0.30	●								
			DC 14.90	DEX1490-GP	PL 2.71	f _n	0.16	0.22	0.30	●								
			DC 15.00	DEX1500-GP	PL 2.73	f _n	0.18	0.25	0.32	●								
			DC 15.10	DEX1510-GP	PL 2.75	f _n	0.18	0.25	0.32	●								
			DC 15.20	DEX1520-GP	PL 2.77	f _n	0.18	0.25	0.32	●								
			DC 15.30	DEX1530-GP	PL 2.78	f _n	0.18	0.25	0.32	●								
			DC 15.40	DEX1540-GP	PL 2.80	f _n	0.18	0.25	0.32	●								
			DC 15.50	DEX1550-GP	PL 2.82	f _n	0.18	0.25	0.32	●								
			DC 15.60	DEX1560-GP	PL 2.84	f _n	0.18	0.25	0.32	●								
			DC 15.70	DEX1570-GP	PL 2.86	f _n	0.18	0.25	0.32	●								
			DC 15.80	DEX1580-GP	PL 2.88	f _n	0.18	0.25	0.32	●								
			DC 15.90	DEX1590-GP	PL 2.89	f _n	0.18	0.25	0.32	●								
			DC 16.00	DEX1600-GP	PL 2.91	f _n	0.20	0.26	0.34	●								
			DC 16.10	DEX1610-GP	PL 2.93	f _n	0.20	0.26	0.34	●								
			DC 16.20	DEX1620-GP	PL 2.95	f _n	0.20	0.26	0.34	●								
			DC 16.30	DEX1630-GP	PL 2.97	f _n	0.20	0.26	0.34	●								
			DC 16.40	DEX1640-GP	PL 2.98	f _n	0.20	0.26	0.34	●								
			DC 16.50	DEX1650-GP	PL 3.00	f _n	0.20	0.26	0.34	●								
			DC 16.60	DEX1660-GP	PL 3.02	f _n	0.20	0.26	0.34	●								
			DC 16.70	DEX1670-GP	PL 3.04	f _n	0.20	0.26	0.34	●								
			DC 16.80	DEX1680-GP	PL 3.06	f _n	0.20	0.26	0.34	●								
			DC 16.90	DEX1690-GP	PL 3.08	f _n	0.20	0.26	0.34	●								
			DC 17.00	DEX1700-GP	PL 3.09	f _n	0.20	0.28	0.36	●								
			DC 17.10	DEX1710-GP	PL 3.11	f _n	0.20	0.28	0.36	●								
			DC 17.20	DEX1720-GP	PL 3.13	f _n	0.20	0.28	0.36	●								
			DC 17.30	DEX1730-GP	PL 3.15	f _n	0.20	0.28	0.36	●								
			DC 17.40	DEX1740-GP	PL 3.17	f _n	0.20	0.28	0.36	●								
			DC 17.50	DEX1750-GP	PL 3.18	f _n	0.20	0.28	0.36	●								

● stock standard

TURNING

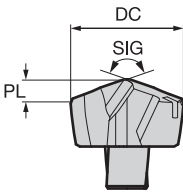
THREADING



GROOVING

MILLING

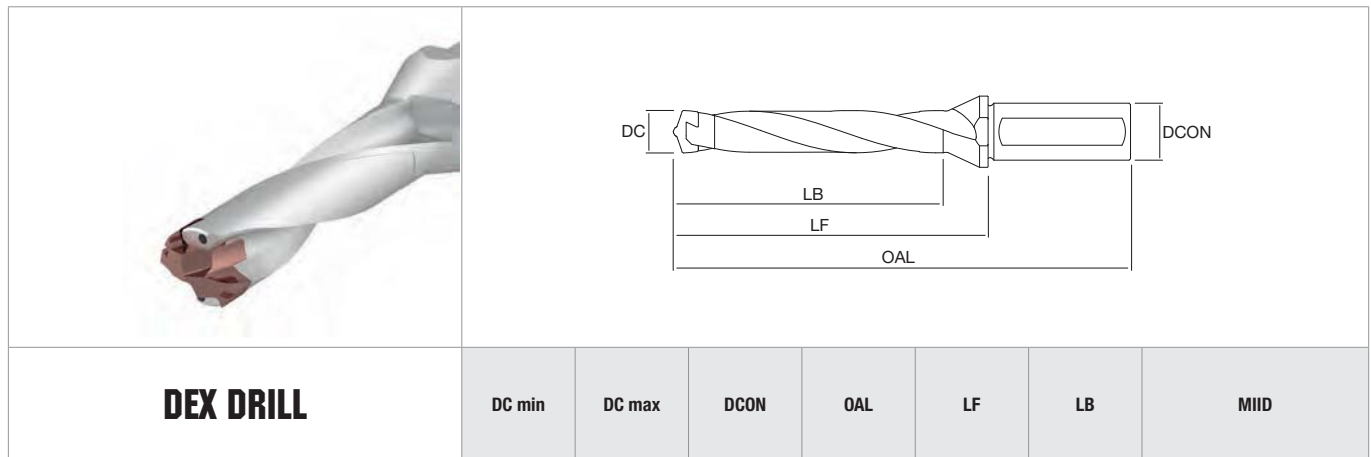
DRILLING

ACCESSORIES

DEX	Self-locking drilling head				ISO513	HC-PVD																
	DC tol.	SIG			P	40 160	JP5625	JP7625														
	k6	140°			M																	
					K	80 180	100 200															
					N																	
					S																	
					H																	
GRADE APPLICATION AREA		Stable machining			+																	
■ main application		General machining			-																	
■ applicable		Unstable machining			+																	

GENERAL	GP P K		DC	DEX	PL	f_n	λ	σ	γ	●																		
			20.40	DEX2040-GP	3.71	f_n	▶	0.26	0.35	0.44	●																	
			20.50	DEX2050-GP	3.73	f_n	▶	0.26	0.35	0.44	●																	
			20.60	DEX2060-GP	3.75	f_n	▶	0.26	0.35	0.44	●																	
			20.70	DEX2070-GP	3.77	f_n	▶	0.26	0.35	0.44	●																	
			20.80	DEX2080-GP	3.79	f_n	▶	0.26	0.35	0.44	●																	
			20.90	DEX2090-GP	3.80	f_n	▶	0.26	0.35	0.44	●																	
REINFORCED	TE K		DC	DEX	PL	f_n	λ	σ	γ	●																		
						12.00	DEX1200-TE	2.18	f_n	▶	0.24	0.28	0.34	●														
						12.50	DEX1250-TE	2.27	f_n	▶	0.24	0.28	0.34	●														
						13.00	DEX1300-TE	2.37	f_n	▶	0.26	0.30	0.36	●														
						13.50	DEX1350-TE	2.46	f_n	▶	0.26	0.30	0.36	●														
						14.00	DEX1400-TE	2.55	f_n	▶	0.28	0.32	0.38	●														
						14.50	DEX1450-TE	2.64	f_n	▶	0.28	0.32	0.38	●														
						15.00	DEX1500-TE	2.73	f_n	▶	0.30	0.34	0.40	●														
						15.50	DEX1550-TE	2.82	f_n	▶	0.30	0.34	0.40	●														
						16.00	DEX1600-TE	2.91	f_n	▶	0.32	0.36	0.42	●														
						16.50	DEX1650-TE	3.00	f_n	▶	0.32	0.36	0.42	●														
						17.00	DEX1700-TE	3.09	f_n	▶	0.34	0.38	0.44	●														
						17.50	DEX1750-TE	3.18	f_n	▶	0.34	0.38	0.44	●														
						18.00	DEX1800-TE	3.28	f_n	▶	0.36	0.40	0.46	●														
						18.50	DEX1850-TE	3.37	f_n	▶	0.36	0.40	0.46	●														
						19.00	DEX1900-TE	3.46	f_n	▶	0.38	0.42	0.48	●														
			19.50	DEX1950-TE	3.55	f_n	▶	0.38	0.42	0.48	●																	
			20.00	DEX2000-TE	3.64	f_n	▶	0.40	0.44	0.50	●																	
			20.50	DEX2050-TE	3.73	f_n	▶	0.40	0.44	0.50	●																	

● stock standard



DEX DRILL			DC min	DC max	DC ON	OAL	LF	LB	MIID	
3xD	NT-DEX-3D	D12-S16F	●	12.00	12.99	16	108	60	48	DEX1200 ÷ DEX1290
		D13-S16F	●	13.00	13.99	16	112	64	51	DEX1300 ÷ DEX1390
		D14-S16F	●	14.00	14.99	16	117	69	55	DEX1400 ÷ DEX1490
		D15-S20F	●	15.00	15.99	20	123	73	58	DEX1500 ÷ DEX1590
		D16-S20F	●	16.00	16.99	20	127	77	61	DEX1600 ÷ DEX1690
		D17-S20F	●	17.00	17.99	20	132	82	65	DEX1700 ÷ DEX1790
		D18-S25F	●	18.00	18.99	25	142	86	68	DEX1800 ÷ DEX1890
		D19-S25F	●	19.00	19.99	25	146	90	71	DEX1900 ÷ DEX1990
D20-S25F	●	20.00	20.99	25	150	94	74	DEX2000 ÷ DEX2090		
5xD	NT-DEX-5D	D12-S16F	●	12.00	12.99	16	134	86	74	DEX1200 ÷ DEX1290
		D13-S16F	●	13.00	13.99	16	140	92	79	DEX1300 ÷ DEX1390
		D14-S16F	●	14.00	14.99	16	147	99	85	DEX1400 ÷ DEX1490
		D15-S20F	●	15.00	15.99	20	155	105	90	DEX1500 ÷ DEX1590
		D16-S20F	●	16.00	16.99	20	161	111	95	DEX1600 ÷ DEX1690
		D17-S20F	●	17.00	17.99	20	168	118	101	DEX1700 ÷ DEX1790
		D18-S25F	●	18.00	18.99	25	180	124	106	DEX1800 ÷ DEX1890
		D19-S25F	●	19.00	19.99	25	186	130	111	DEX1900 ÷ DEX1990
D20-S25F	●	20.00	20.99	25	192	136	116	DEX2000 ÷ DEX2090		

● stock standard



DC ≤ 17	NT-WR1217
DC > 18	NT-WR1820

CUTTING SPEED [m/min]

	MATERIALS (HARDNESS/Rm)	W.-Nr	DIN	AISI-ASTM	TRADE MARK	JP5625	JP7625
P1	Free cutting steel and structural steel (< 500 N/mm ²)	1.0715 1.0765	9 SMn 28 36 SMnPb 14	1213 A29	AVP PR80	100÷160	
P2	Carbon steel and low alloy steel (500-700 N/mm ²)	1.7147 1.0511	20 MnCr 5 C 40	5120 1040	- -	80÷140	
P3	Medium alloy steel and heat treated steel (600-800 N/mm ²)	1.1201 1.6511	42 CrMo 4 36 CrNiMo 4	4142, 4140 9840	- -	60÷100	
P4	High alloy steel (800-1000 N/mm ²)	1.1663 1.3505	C 125 W 100 Cr 6	W1 52100	- -	50÷90	
P5	Tool steel (900-1200 N/mm ²)	1.2080 1.2379	X 210 Cr 12 X 155 CrVMo 12 1	D3 -	K100 K110	40÷80	
K1	Grey cast iron (150-250 HB)	0.6020 0.6025	GG-20 GG-25	A48 30 B A48 35 B	- -	80÷180	100÷200
K2	Nodular cast iron (150-350 HB)	0.7050 0.7070	GGG-50 GGG-70	A536 80-55-6 A536 100-70-03	- -	80÷140	100÷160

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



DRILLING DRSDrill

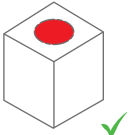
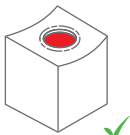
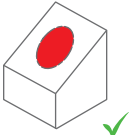
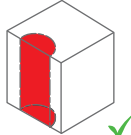
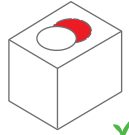
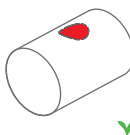

DRSDRILL

2XD
3XD
4XD
5XD

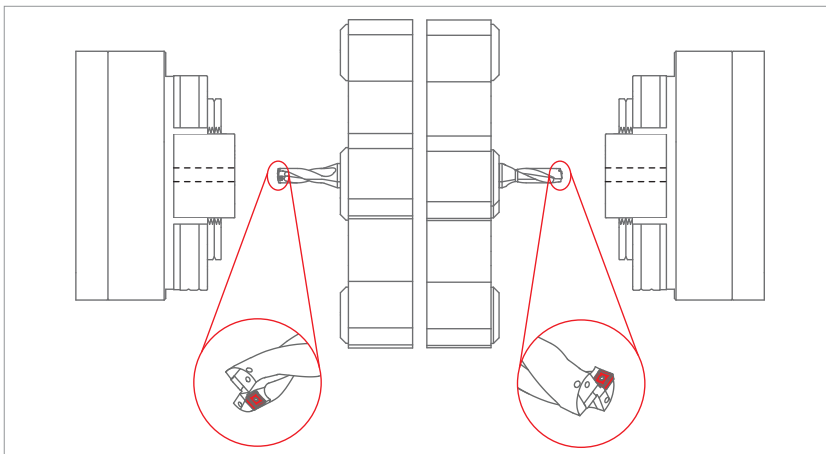
High performance drills for universal use



1. Where is DRSdrill applicable?

PLAIN SURFACE	CONCAVE SURFACE	SLANT SURFACE	HALF HOLE	HOLE EXPANSION	PIPES	STACKED PLATES
						

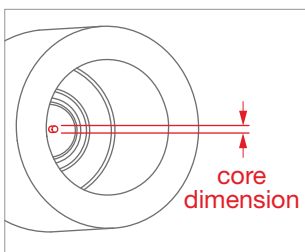
2. Lathe installation



It's recommended to set the outer insert facing the operator as shown in the drawing, both for main and sub-spindle to gain the best results.

Following this suggestion, generally, the inner insert will be set below the center which is the recommended situation for optimal operation.

3. Quick check of the center height



To check if the machine axis is correctly aligned, a test hole should be drilled checking the remaining core on the hole bottom.

Center-height adjustment is necessary when **no core** remains or if the core diameter is larger than 1mm.

SP \square X	DRS 4 edges drilling inserts					ISO513	HC-PVD		HW															
	Size	IC	S	D1	RE		JPS5625	JPS530	JPS635	JW6520														
<p>4 edges</p>	05	5.00	2.38	2.50	0.40	P	80 300	80 300																
	06	6.00	2.38	2.80	0.40	M			50 220															
	07	7.94	3.97	2.80	0.80	K	120 250	120 250																
	09	9.80	4.30	4.10	0.80	N				200 400														
	11	11.50	4.76	4.40	0.80	S																		
	14	14.30	5.20	5.50	1.20	H																		
GRADE APPLICATION AREA	Stable machining					+ Hardness - Toughness +																		
■ main application	General machining																							
■ applicable	Unstable machining																							

GENERAL	GP P M K S	SPMX	Part Number	2xD	3xD	4xD	5xD	f _n	a _p	ISO513		HC-PVD		HW															
										P	M	JPS5625	JPS530	JPS635	JW6520														
AL N	polished surface	SPGX	050204-AL	2xD	f _n	0.06	0.09	0.12																					
				3xD	f _n	0.06	0.09	0.12																					
				4xD	f _n	0.04	0.07	0.10																					
				5xD	f _n	0.04	0.06	0.08																					
				2xD	f _n	0.08	0.12	0.16																					
				3xD	f _n	0.08	0.12	0.16																					
		SPGX	060204-AL	4xD	f _n	0.06	0.09	0.12																					
				5xD	f _n	0.06	0.08	0.10																					
				2xD	f _n	0.10	0.14	0.18																					
				3xD	f _n	0.10	0.14	0.18																					
				4xD	f _n	0.08	0.11	0.14																					
				5xD	f _n	0.08	0.10	0.12																					
		SPGX	090408-AL	2xD	f _n	0.10	0.15	0.20																					
				3xD	f _n	0.10	0.15	0.20																					
				4xD	f _n	0.09	0.12	0.15																					
				5xD	f _n	0.09	0.11	0.13																					
				2xD	f _n	0.11	0.16	0.21																					
				3xD	f _n	0.11	0.16	0.21																					
SPGX	110408-AL	4xD	f _n	0.10	0.14	0.18																							
		5xD	f _n	0.10	0.13	0.16																							
		2xD	f _n	0.12	0.17	0.22																							
		3xD	f _n	0.12	0.17	0.22																							
		4xD	f _n	0.10	0.15	0.20																							
		5xD	f _n	0.10	0.14	0.18																							

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

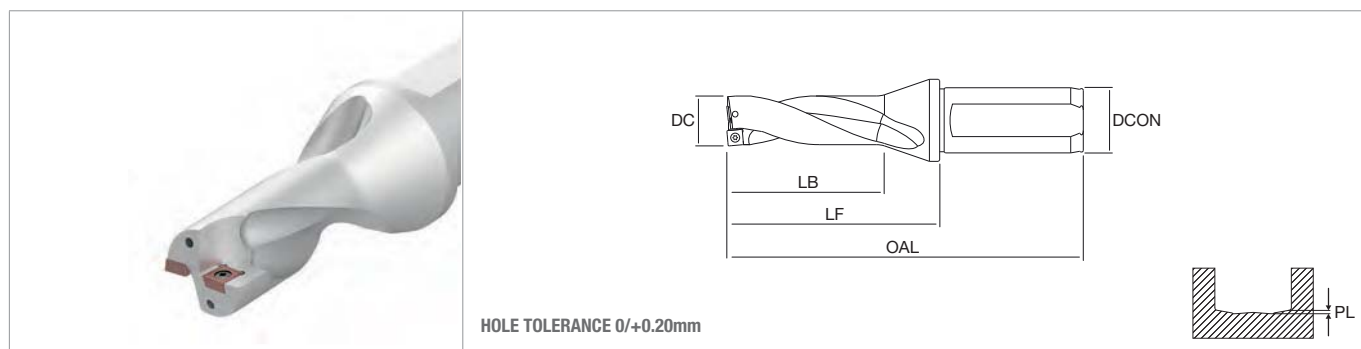
THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES



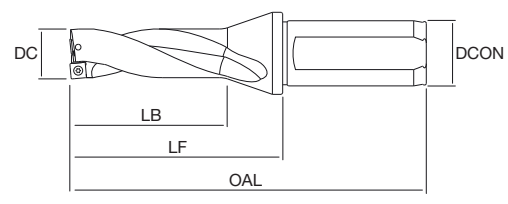
DRS 2XD			DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
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05	NT-DRS-2D	D13.00-S20-05	●	13	20	94	44	26	0.50	0.40	SPMX05 SPGX05
		D14.00-S20-05	●	14	20	96	46	28	0.50	0.40	
		D15.00-S20-05	●	15	20	99	49	30	0.50	0.40	
06	NT-DRS-2D	D16.00-S25-06	●	16	25	108	52	32	0.50	0.50	SPMX06 SPGX06
		D17.00-S25-06	●	17	25	110	54	34	0.50	0.50	
		D18.00-S25-06	●	18	25	113	57	36	0.50	0.50	
		D19.00-S25-06	●	19	25	115	59	38	0.50	0.50	
		D20.00-S25-06	●	20	25	119	63	40	0.50	0.50	
		D21.00-S25-06	●	21	25	121	65	42	0.25	0.50	
07	NT-DRS-2D	D22.00-S25-07	●	22	25	123	67	44	0.50	0.50	SPMX07 SPGX07
		D23.00-S32-07	●	23	32	131	71	46	0.50	0.50	
		D24.00-S32-07	●	24	32	134	74	48	0.50	0.50	
		D25.00-S32-07	●	25	32	137	77	50	0.50	0.50	
		D26.00-S32-07	●	26	32	139	79	52	0.25	0.60	
		D27.00-S32-07	●	27	32	141	81	54	0.25	0.60	
09	NT-DRS-2D	D28.00-S32-09	●	28	32	144	84	56	0.50	0.80	SPMX09 SPGX09
		D29.00-S32-09	●	29	32	146	86	58	0.50	0.80	
		D30.00-S32-09	●	30	32	151	91	60	0.50	0.80	
		D31.00-S32-09	●	31	32	154	94	62	0.25	0.80	
		D32.00-S32-09	●	32	32	156	96	64	0.25	0.80	
		D33.00-S32-09	●	33	32	159	99	66	0.25	0.80	
11	NT-DRS-2D	D34.00-S40-11	●	34	40	171	101	68	0.50	0.90	SPMX11 SPGX11
		D35.00-S40-11	●	35	40	174	104	70	0.50	0.90	
		D36.00-S40-11	●	36	40	177	107	72	0.50	0.90	
		D37.00-S40-11	●	37	40	180	110	74	0.50	0.90	
		D38.00-S40-11	●	38	40	183	113	76	0.50	0.90	
		D39.00-S40-11	●	39	40	185	115	78	0.50	0.90	
		D40.00-S40-11	●	40	40	188	118	80	0.25	0.90	
		D41.00-S40-11	●	41	40	191	121	82	0.25	0.90	
14	NT-DRS-2D	D42.00-S40-14	●	42	40	193	123	84	0.50	1.00	SPMX14 SPGX14
		D43.00-S40-14	●	43	40	196	126	86	0.50	1.00	
		D44.00-S40-14	●	44	40	198	128	88	0.50	1.00	
		D45.00-S40-14	●	45	40	202	132	90	0.50	1.00	
		D46.00-S40-14	●	46	40	205	135	92	0.50	1.00	
		D47.00-S40-14	●	47	40	207	137	94	0.50	1.00	
		D48.00-S40-14	●	48	40	210	140	96	0.25	1.00	
		D49.00-S40-14	●	49	40	212	142	98	0.25	1.00	
		D50.00-S40-14	●	50	40	215	145	100	0.25	1.00	

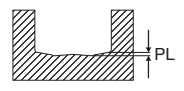
● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-DRS-2D D _{00.00} -S ₀₀ -05	NT-ST059	NT-FTB06
NT-DRS-2D D _{00.00} -S ₀₀ -06	NT-ST061	NT-FTB06
NT-DRS-2D D _{00.00} -S ₀₀ -07	NT-ST062	NT-FTB07
NT-DRS-2D D _{00.00} -S ₀₀ -09	NT-ST063	NT-FTB15
NT-DRS-2D D _{00.00} -S ₀₀ -11	NT-ST064	NT-FTB15
NT-DRS-2D D _{00.00} -S ₀₀ -14	NT-ST066	NT-FTB20



HOLE TOLERANCE 0/+0.25mm



DRS 3XD			DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
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05	NT-DRS-3D	D12.50-S20-05	●	12.5	20	107	57	39	0.50	0.40	SPMX05 SPGX05
		D13.00-S20-05	●	13	20	107	57	39	0.50	0.40	
		D13.50-S20-05	●	13.5	20	110	60	42	0.50	0.40	
		D14.00-S20-05	●	14	20	110	60	42	0.50	0.40	
		D14.50-S20-05	●	14.5	20	114	64	45	0.50	0.40	
06	NT-DRS-3D	D15.50-S25-06	●	15.5	25	124	68	48	0.50	0.50	SPMX06 SPGX06
		D16.00-S25-06	●	16	25	124	68	48	0.50	0.50	
		D16.50-S25-06	●	16.5	25	127	71	51	0.50	0.50	
		D17.00-S25-06	●	17	25	127	71	51	0.50	0.50	
		D17.50-S25-06	●	17.5	25	131	75	54	0.50	0.50	
		D18.00-S25-06	●	18	25	131	75	54	0.50	0.50	
		D18.50-S25-06	●	18.5	25	134	78	57	0.50	0.50	
		D19.00-S25-06	●	19	25	134	78	57	0.50	0.50	
		D19.50-S25-06	●	19.5	25	139	83	60	0.50	0.50	
		D20.00-S25-06	●	20	25	139	83	60	0.50	0.50	
		D20.50-S25-06	●	20.5	25	142	86	63	0.25	0.50	
		D21.00-S25-06	●	21	25	142	86	63	0.25	0.50	
		D21.50-S25-06	●	21.5	25	145	89	66	0.25	0.50	
07	NT-DRS-3D	D22.00-S25-07	●	22	25	145	89	66	0.50	0.50	SPMX07 SPGX07
		D22.50-S32-07	●	22.5	32	154	94	69	0.50	0.50	
		D23.00-S32-07	●	23	32	154	94	69	0.50	0.50	
		D23.50-S32-07	●	23.5	32	158	98	72	0.50	0.50	
		D24.00-S32-07	●	24	32	158	98	72	0.50	0.50	
		D24.50-S32-07	●	24.5	32	162	102	75	0.50	0.50	
		D25.00-S32-07	●	25	32	162	102	75	0.50	0.50	
		D25.50-S32-07	●	25.5	32	165	105	78	0.50	0.60	
		D26.00-S32-07	●	26	32	165	105	78	0.25	0.60	
		D26.50-S32-07	●	26.5	32	168	108	81	0.25	0.60	
		D27.00-S32-07	●	27	32	168	108	81	0.25	0.60	
09	NT-DRS-3D	D27.50-S32-07	●	27.5	32	172	112	84	0.25	0.60	SPMX09 SPGX09
		D28.00-S32-09	●	28	32	172	112	84	0.50	0.80	
		D28.50-S32-09	●	28.5	32	175	115	87	0.50	0.80	
		D29.00-S32-09	●	29	32	175	115	87	0.50	0.80	
		D29.50-S32-09	●	29.5	32	181	121	90	0.50	0.80	
		D30.00-S32-09	●	30	32	181	121	90	0.50	0.80	
		D31.00-S32-09	●	31	32	185	125	93	0.25	0.80	
D32.00-S32-09	●	32	32	188	128	96	0.25	0.80			
D33.00-S32-09	●	33	32	192	132	99	0.25	0.80			

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

TURNING

THREADING

GROOVING



MILLING

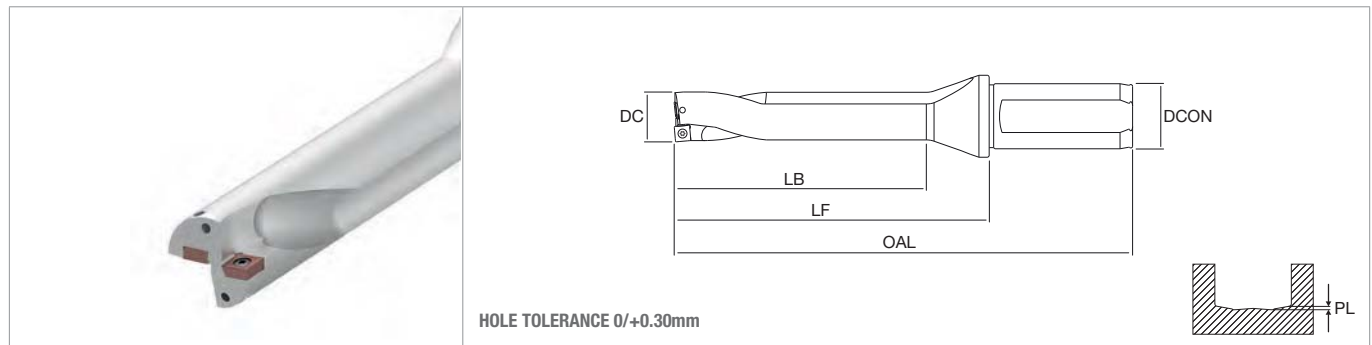
DRILLING

ACCESSORIES

DRS 3XD				DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
11	NT-DRS-3D	D34.00-S40-11	●	34	40	205	135	102	0.50	0.90	SPMX11 SPGX11
		D35.00-S40-11	●	35	40	209	139	105	0.50	0.90	
		D36.00-S40-11	●	36	40	213	143	108	0.50	0.90	
		D37.00-S40-11	●	37	40	217	147	111	0.50	0.90	
		D38.00-S40-11	●	38	40	221	151	114	0.50	0.90	
		D39.00-S40-11	●	39	40	224	154	117	0.50	0.90	
		D40.00-S40-11	●	40	40	228	158	120	0.25	0.90	
		D41.00-S40-11	●	41	40	232	162	123	0.25	0.90	
14	NT-DRS-3D	D42.00-S40-14	●	42	40	235	165	126	0.50	1.00	SPMX14 SPGX14
		D43.00-S40-14	●	43	40	239	169	129	0.50	1.00	
		D44.00-S40-14	●	44	40	242	172	132	0.50	1.00	
		D45.00-S40-14	●	45	40	247	177	135	0.50	1.00	
		D46.00-S40-14	●	46	40	251	181	138	0.50	1.00	
		D47.00-S40-14	●	47	40	254	184	141	0.50	1.00	
		D48.00-S40-14	●	48	40	258	188	144	0.25	1.00	
		D49.00-S40-14	●	49	40	261	191	147	0.25	1.00	
		D50.00-S40-14	●	50	40	265	195	150	0.25	1.00	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		
NT-DRS-3D D0000-S00-05	NT-ST059	NT-FTB06
NT-DRS-3D D0000-S00-06	NT-ST061	NT-FTB06
NT-DRS-3D D0000-S00-07	NT-ST062	NT-FTB07
NT-DRS-3D D0000-S00-09	NT-ST063	NT-FTB15
NT-DRS-3D D0000-S00-11	NT-ST064	NT-FTB15
NT-DRS-3D D0000-S00-14	NT-ST066	NT-FTB20



DRS 4XD			DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
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05	NT-DRS-4D	D12.50-S20-05	●	12.5	20	120	70	52	0.50	0.40	SPMX05 SPGX05
		D13.00-S20-05	●	13	20	120	70	52	0.50	0.40	
		D13.50-S20-05	●	13.5	20	124	74	56	0.50	0.40	
		D14.00-S20-05	●	14	20	124	74	56	0.50	0.40	
		D14.50-S20-05	●	14.5	20	129	79	60	0.50	0.40	
06	NT-DRS-4D	D15.50-S25-06	●	15.5	25	140	84	64	0.50	0.50	SPMX06 SPGX06
		D16.00-S25-06	●	16	25	140	84	64	0.50	0.50	
		D16.50-S25-06	●	16.5	25	144	88	68	0.50	0.50	
		D17.00-S25-06	●	17	25	144	88	68	0.50	0.50	
		D17.50-S25-06	●	17.5	25	149	93	72	0.50	0.50	
		D18.00-S25-06	●	18	25	149	93	72	0.50	0.50	
		D18.50-S25-06	●	18.5	25	153	97	76	0.50	0.50	
		D19.00-S25-06	●	19	25	153	97	76	0.50	0.50	
		D19.50-S25-06	●	19.5	25	159	103	80	0.50	0.50	
		D20.00-S25-06	●	20	25	159	103	80	0.50	0.50	
		D20.50-S25-06	●	20.5	25	163	107	84	0.25	0.50	
		D21.00-S25-06	●	21	25	163	107	84	0.25	0.50	
		D21.50-S25-06	●	21.5	25	167	111	88	0.25	0.50	
07	NT-DRS-4D	D22.00-S25-07	●	22	25	167	111	88	0.50	0.50	SPMX07 SPGX07
		D22.50-S32-07	●	22.5	32	177	117	92	0.50	0.50	
		D23.00-S32-07	●	23	32	177	117	92	0.50	0.50	
		D23.50-S32-07	●	23.5	32	182	122	96	0.50	0.50	
		D24.00-S32-07	●	24	32	182	122	96	0.50	0.50	
		D24.50-S32-07	●	24.5	32	187	127	100	0.50	0.50	
		D25.00-S32-07	●	25	32	187	127	100	0.50	0.50	
		D25.50-S32-07	●	25.5	32	191	131	104	0.50	0.60	
		D26.00-S32-07	●	26	32	191	131	104	0.25	0.60	
		D26.50-S32-07	●	26.5	32	195	135	108	0.25	0.60	
		D27.00-S32-07	●	27	32	195	135	108	0.25	0.60	
09	NT-DRS-4D	D27.50-S32-07	●	27.5	32	200	140	112	0.25	0.60	SPMX09 SPGX09
		D28.00-S32-09	●	28	32	200	140	112	0.50	0.80	
		D28.50-S32-09	●	28.5	32	204	144	116	0.50	0.80	
		D29.00-S32-09	●	29	32	204	144	116	0.50	0.80	
		D29.50-S32-09	●	29.5	32	211	151	120	0.50	0.80	
		D30.00-S32-09	●	30	32	211	151	120	0.50	0.80	
		D31.00-S32-09	●	31	32	216	156	124	0.25	0.80	
D32.00-S32-09	●	32	32	220	160	128	0.25	0.80			
D33.00-S32-09	●	33	32	225	165	132	0.25	0.80			

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

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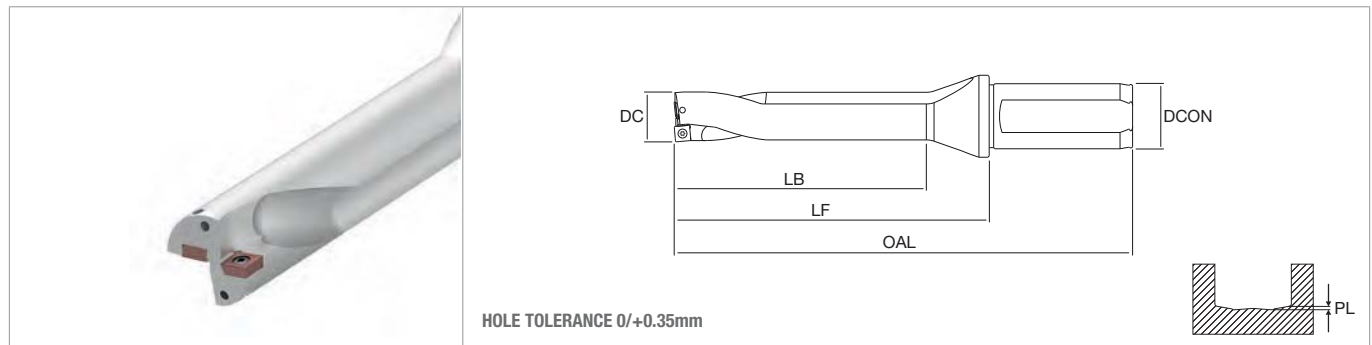
DRILLING

ACCESSORIES

DRS 4XD				DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
11	NT-DRS-4D	D34.00-S40-11	●	34	40	239	169	136	0.50	0.90	SPMX11 SPGX11
		D35.00-S40-11	●	35	40	244	174	140	0.50	0.90	
		D36.00-S40-11	●	36	40	249	179	144	0.50	0.90	
		D37.00-S40-11	●	37	40	254	184	148	0.50	0.90	
		D38.00-S40-11	●	38	40	259	189	152	0.50	0.90	
		D39.00-S40-11	●	39	40	263	193	156	0.50	0.90	
		D40.00-S40-11	●	40	40	268	198	160	0.25	0.90	
		D41.00-S40-11	●	41	40	273	203	164	0.25	0.90	
14	NT-DRS-4D	D42.00-S40-14	●	42	40	277	207	168	0.50	1.00	SPMX14 SPGX14
		D43.00-S40-14	●	43	40	282	212	172	0.50	1.00	
		D44.00-S40-14	●	44	40	286	216	176	0.50	1.00	
		D45.00-S40-14	●	45	40	292	222	180	0.50	1.00	
		D46.00-S40-14	●	46	40	297	227	184	0.50	1.00	
		D47.00-S40-14	●	47	40	301	231	188	0.50	1.00	
		D48.00-S40-14	●	48	40	306	236	192	0.25	1.00	
		D49.00-S40-14	●	49	40	310	240	196	0.25	1.00	
		D50.00-S40-14	●	50	40	315	245	200	0.25	1.00	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
		
NT-DRS-4D D□□□□-S□□-05	NT-ST059	NT-FTB06
NT-DRS-4D D□□□□-S□□-06	NT-ST061	NT-FTB06
NT-DRS-4D D□□□□-S□□-07	NT-ST062	NT-FTB07
NT-DRS-4D D□□□□-S□□-09	NT-ST063	NT-FTB15
NT-DRS-4D D□□□□-S□□-11	NT-ST064	NT-FTB15
NT-DRS-4D D□□□□-S□□-14	NT-ST066	NT-FTB20



HOLE TOLERANCE 0/+0.35mm

DRS 5XD			DC	DCON	OAL	LF	LB	ADJLX max. radial offset	PL hole bottom shape	MIID
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05	NT-DRS-5D	D13.00-S20-05	●	13	20	133	83	65	0.50	0.40	SPMX05 SPGX05
		D14.00-S20-05	●	14	20	138	88	70	0.50	0.40	
		D15.00-S20-05	●	15	20	144	94	75	0.50	0.40	
06	NT-DRS-5D	D16.00-S25-06	●	16	25	156	100	80	0.50	0.50	SPMX06 SPGX06
		D17.00-S25-06	●	17	25	161	105	85	0.50	0.50	
		D18.00-S25-06	●	18	25	167	111	90	0.50	0.50	
		D19.00-S25-06	●	19	25	172	116	95	0.50	0.50	
		D20.00-S25-06	●	20	25	179	123	100	0.50	0.50	
		D21.00-S25-06	●	21	25	184	128	105	0.25	0.50	
07	NT-DRS-5D	D22.00-S25-07	●	22	25	189	133	110	0.50	0.50	SPMX07 SPGX07
		D23.00-S32-07	●	23	32	200	140	115	0.50	0.50	
		D24.00-S32-07	●	24	32	206	146	120	0.50	0.50	
		D25.00-S32-07	●	25	32	212	152	125	0.50	0.50	
		D26.00-S32-07	●	26	32	217	157	130	0.25	0.60	
		D27.00-S32-07	●	27	32	222	162	135	0.25	0.60	
09	NT-DRS-5D	D28.00-S32-09	●	28	32	228	168	140	0.50	0.80	SPMX09 SPGX09
		D29.00-S32-09	●	29	32	233	173	145	0.50	0.80	
		D30.00-S32-09	●	30	32	241	181	150	0.50	0.80	
		D31.00-S32-09	●	31	32	247	187	155	0.25	0.80	
		D32.00-S32-09	●	32	32	252	192	160	0.25	0.80	
		D33.00-S32-09	●	33	32	258	198	165	0.25	0.80	
11	NT-DRS-5D	D34.00-S40-11	●	34	40	273	203	170	0.50	0.90	SPMX11 SPGX11
		D35.00-S40-11	●	35	40	279	209	175	0.50	0.90	
		D36.00-S40-11	●	36	40	285	215	180	0.50	0.90	
		D37.00-S40-11	●	37	40	291	221	185	0.50	0.90	
		D38.00-S40-11	●	38	40	297	227	190	0.50	0.90	
		D39.00-S40-11	●	39	40	302	232	195	0.50	0.90	
		D40.00-S40-11	●	40	40	308	238	200	0.25	0.90	
		D41.00-S40-11	●	41	40	314	244	205	0.25	0.90	
14	NT-DRS-5D	D42.00-S40-14	●	42	40	319	249	210	0.50	1.00	SPMX14 SPGX14
		D43.00-S40-14	●	43	40	325	255	215	0.50	1.00	
		D44.00-S40-14	●	44	40	330	260	220	0.50	1.00	
		D45.00-S40-14	●	45	40	337	267	225	0.50	1.00	
		D46.00-S40-14	●	46	40	343	273	230	0.50	1.00	
		D47.00-S40-14	●	47	40	348	278	235	0.50	1.00	
		D48.00-S40-14	●	48	40	354	284	240	0.25	1.00	
		D49.00-S40-14	●	49	40	359	289	245	0.25	1.00	
		D50.00-S40-14	●	50	40	365	295	250	0.25	1.00	

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH

NT-DRS-5D D _{00.00} -S ₀₀ -05	NT-ST059	NT-FTB06
NT-DRS-5D D _{00.00} -S ₀₀ -06	NT-ST061	NT-FTB06
NT-DRS-5D D _{00.00} -S ₀₀ -07	NT-ST062	NT-FTB07
NT-DRS-5D D _{00.00} -S ₀₀ -09	NT-ST063	NT-FTB15
NT-DRS-5D D _{00.00} -S ₀₀ -11	NT-ST064	NT-FTB15
NT-DRS-5D D _{00.00} -S ₀₀ -14	NT-ST066	NT-FTB20

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

DRSDRILL

CUTTING SPEED [m/min]

	MATERIALS	HARDNESS/Rm	W.-Nr	DIN	AISI-ASTM	TRADE MARK	JP5625	JP5530	JP9635	JU6520	
TURNING	P1	< 500 N/mm ²	1.0715	9 SMn 28	1213	AVP	180÷300	180÷300			
			1.0765	36 SMnPb 14	A29	PR80					
	P2	Carbon steel and low alloy steel	500-700 N/mm ²	1.7147	20 MnCr 5	5120	-	140÷240	140÷240		
				1.0511	C 40	1040	-				
	P3	Medium alloy steel and heat treated steel	600-800 N/mm ²	1.1201	42 CrMo 4	4142, 4140	-	100÷220	100÷220		
1.6511				36 CrNiMo 4	9840	-					
P4	High alloy steel	800-1000 N/mm ²	1.1663	C 125 W	W1	-	100÷180	100÷180			
			1.3505	100 Cr 6	52100	-					
P5	Tool steel	900-1200 N/mm ²	1.2080	X 210 Cr 12	D3	K100	80÷150	80÷150			
			1.2379	X 155 CrVMo 12 1	-	K110					
M1	Ferritic stainless steel	400-700 N/mm ²	1.4016	X 6 Cr 17	430	-			120÷220		
			1.4104	X 12 CrMoS 17	430 F	-					
M2	Austenitic stainless steel (good machinability)	500-750 N/mm ²	1.4305	X 10 CrNiS 18 9	303	-			80÷180		
			1.4301	X 6 CrNi 18 10	304, 304 H	-					
M3	Austenitic stainless steel (medium machinability)	550-850 N/mm ²	1.4401	X 5 CrNiMo 17 12 2	316	-			60÷150		
			1.4462	X 2 CrNiMoN 22 5	F 51-329 A	DUPLEX					
M4	Martensitic stainless steel	650-950 N/mm ²	1.4021	X 20 Cr 13	420	-			60÷150		
			1.4410	X 2 CrNiMoN 25 7 4	F 53-329 S1	SUPER DUPLEX					
M5	PH stainless steel	800-1250 N/mm ²	1.4540	X 4 CrNiCuNb 16 4	XM-12	15-5-PH			50÷120		
			1.4542	X 5 CrNiNb 16 4	631	17-4-PH					
K1	Grey cast iron	150-250 HB	0.6020	GG-20	A48 30 B	-	180÷250	180÷250			
			0.6025	GG-25	A48 35 B	-					
K2	Nodular cast iron	150-350 HB	0.7050	GGG-50	A536 80-55-6	-	120÷180	120÷180			
			0.7070	GGG-70	A536 100-70-03	-					
N1	Aluminium alloys ≤ 12% Si		3.3547	AlMg4.5Mn	5083	Peraluman 440				250÷400	
			3.2315	AlMgSi 1	6082	Anticorodal 100					
N2	Aluminium alloys > 12% Si		3.2582	GD-AISI12	A413.0					150÷300	
				G-AISI6Cu4	319						
N3	Copper		2.0940-01	CuAl10Fe	CA952					200÷300	
			2.1176	CuPb10Sn	CA937						
N4	Bronze and brass		2.0401	Cu Zn39Pb3		OT58 AMPCO 18				200÷300	

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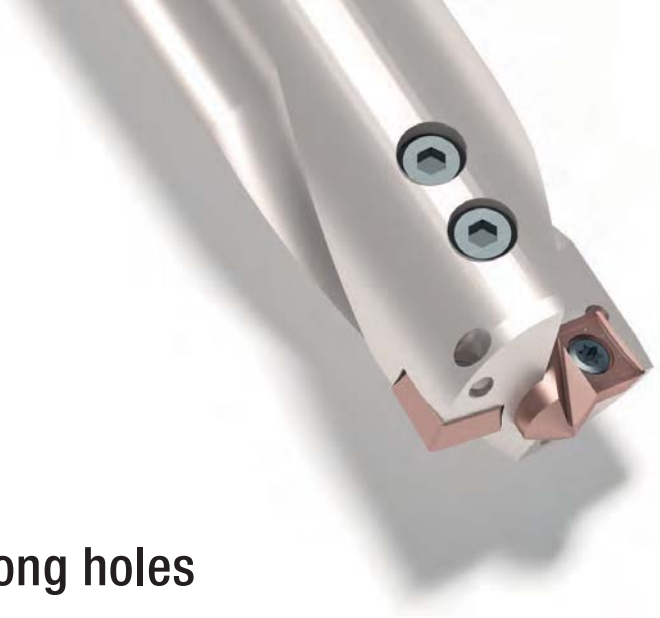
ACCESSORIES



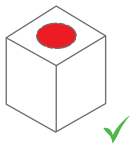
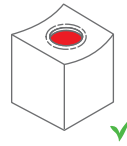
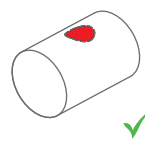
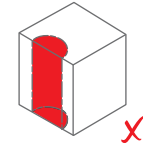
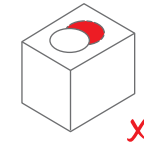
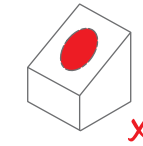
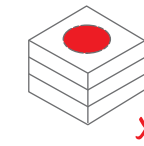
DRILLING DRSpilot

DRSPILOT^{6XD}_{9XD}

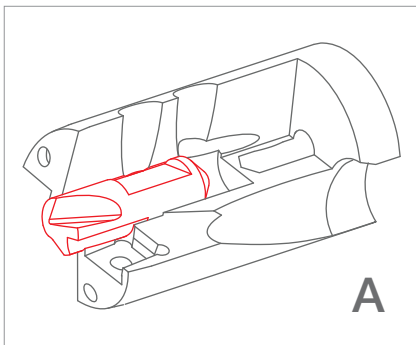
Perfect centering even on extra long holes



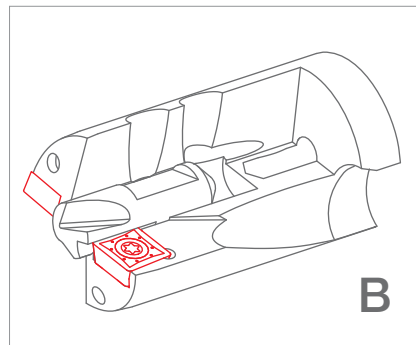
1. Where is DRSpilot applicable?

PLAIN SURFACE	CONCAVE SURFACE	PIPES	HALF HOLE	HOLE EXPANSION	SLANT SURFACE	STACKED PLATES
						

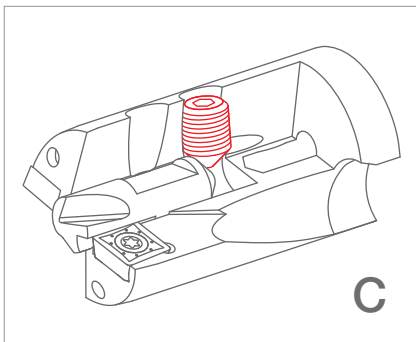
2. Installation of inserts and pilot drill



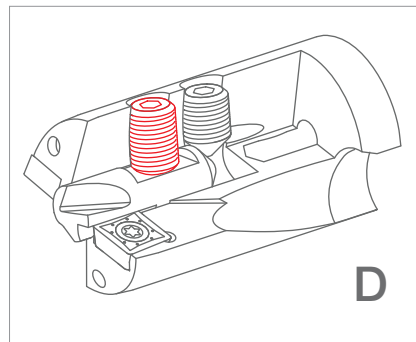
Insert DRSP pilot in the drilling body.



Install the SPMX/SPGX inserts.



Adjust the DRSP pilot height using the setting grain as shown in the drawing, following the table at pag.273.



Screw tight the locking grain.

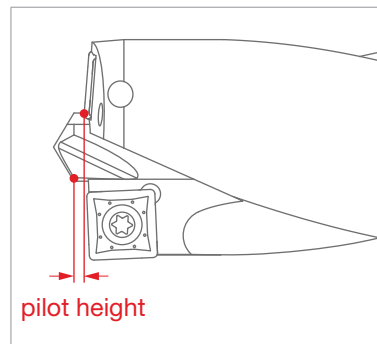
<h1>SP_□X</h1>	DRS PILOT 4 edges drilling inserts					ISO513				HC-PVD		HW				
						JP5625	JP5530	JP9635	JW6520	60 220	60 220	40 160	150 300			
<p>4 edges</p>	Size	IC	S	D1	RE	P										
	05	5.00	2.38	2.50	0.40	M										
	06	6.00	2.38	2.80	0.40	K										
	07	7.94	3.97	2.80	0.80	N										
							S									
						H										
GRADE APPLICATION AREA		Stable machining														
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: orange; margin-right: 5px;"></div> main application </div>		General machining														
<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: lightorange; margin-right: 5px;"></div> applicable </div>		Unstable machining														

		GP P M K																			
GENERAL		SPMX 050204-GP	6xD	$f_n \triangleright$ 0.08	0.10	0.12	●	●	●												
			9xD	$f_n \triangleright$ 0.06	0.08	0.10															
		SPMX 060204-GP	6xD	$f_n \triangleright$ 0.08	0.10	0.12	●	●	●												
			9xD	$f_n \triangleright$ 0.06	0.08	0.10															
	SPMX 07T308-GP	6xD	$f_n \triangleright$ 0.09	0.11	0.13	●	●	●													
			9xD	$f_n \triangleright$ 0.07	0.09	0.11															
ALUMINIUM	 polished surface	SPGX 050204-AL	6xD	$f_n \triangleright$ 0.05	0.07	0.09				●											
			9xD	$f_n \triangleright$ 0.04	0.06	0.08															
		SPGX 060204-AL	6xD	$f_n \triangleright$ 0.05	0.07	0.09				●											
			9xD	$f_n \triangleright$ 0.04	0.06	0.08															
	SPGX 07T308-AL	6xD	$f_n \triangleright$ 0.06	0.08	0.10	●															
			9xD	$f_n \triangleright$ 0.05	0.07	0.09															

● stock standard

<h1>DRSP</h1>		DRS PILOT interchangeable centering drill				
	Size	DC	OAL	PL	SIG	
	06	6	20	1.5	118°	
	08	8	25	2.1	118°	

HEIGHT ADJUSTEMENT



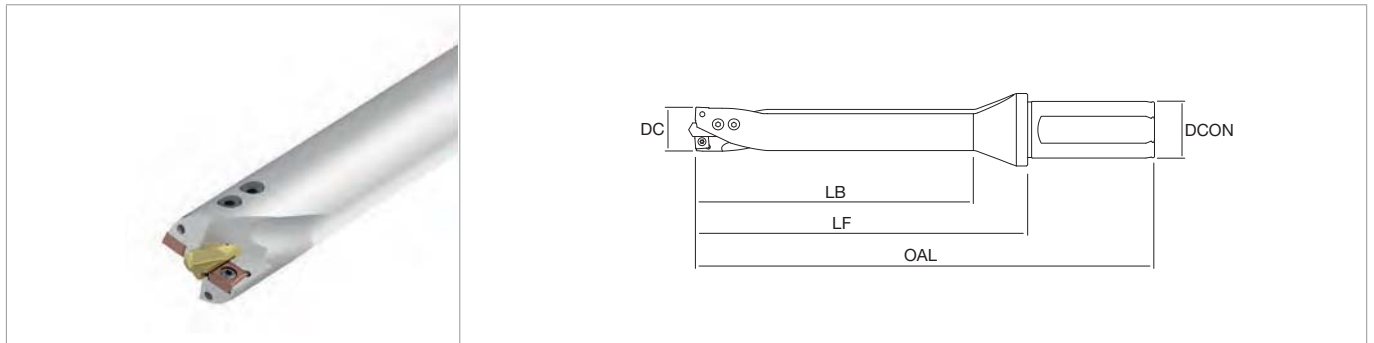
		GP P M K N			
GENERAL		DRSP 06-GP	HSS	TIN	●
		DRSP 08-GP	HSS	TIN	●

● stock standard

MATERIAL	6xD	9xD
P M K	1.0 mm	1.4 mm
N	1.5 mm	1.7 mm

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING



THREADING

DRS PILOT 6XD				DC	DCON	OAL	LF	LB	KG	MIID (insert)	MIID (pilot)
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GROOVING

	NT-DRS-6D	D18.00-S25-05P6	●	18	25	191	135	112		SPMX05 SPGX05	DRSP06
05		D19.00-S25-05P6	●	19	25	197	141	118			
	06	NT-DRS-6D	D20.00-S25-06P6	●	20	25	203	147	124		SPMX06 SPGX06
D21.00-S25-06P6			●	21	25	209	153	130			
D22.00-S25-06P6			●	22	25	215	159	136			
D23.00-S32-06P6			●	23	32	228	168	142			
D24.00-S32-06P6			●	24	32	234	174	148			
D25.00-S32-06P6			●	25	32	240	180	154			
07	NT-DRS-6D	D26.00-S32-07P8	●	26	32	246	186	160		SPMX07 SPGX07	DRSP08
		D27.00-S32-07P8	●	27	32	252	192	166			
		D28.00-S32-07P8	●	28	32	258	198	172			
		D29.00-S32-07P8	●	29	32	264	204	178			
		D30.00-S32-07P8	●	30	32	270	210	184			

● stock standard

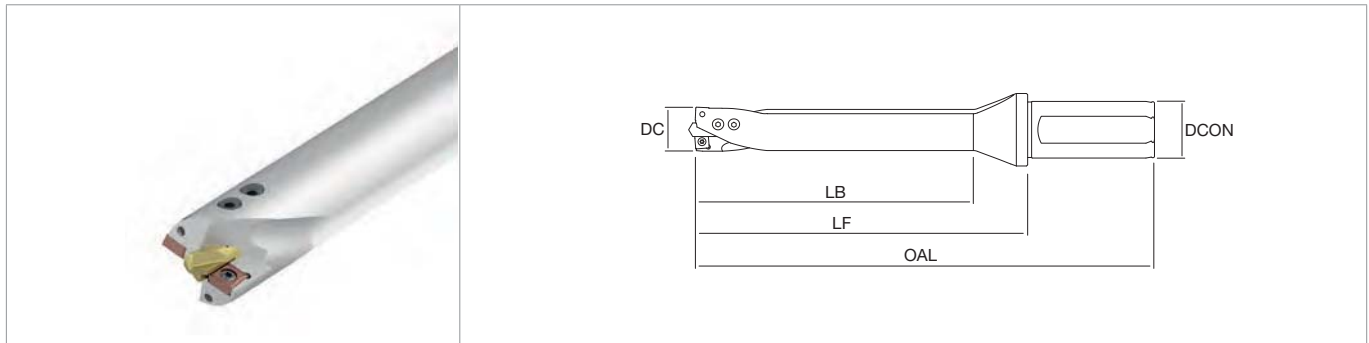
MILLING

Spare Parts	INSERT SCREW	INSERT WRENCH
NT-DRS-6D D _{00.00} -S ₀₀ -05P6	NT-ST059	NT-FTB06
NT-DRS-6D D _{00.00} -S ₀₀ -06P6	NT-ST061	NT-FTB06
NT-DRS-6D D _{00.00} -S ₀₀ -07P8	NT-ST062	NT-FTB07

Spare Parts	LOCKING GRAIN	SETTING GRAIN	GRAIN WRENCH
DC 18÷22	NT-ST042	NT-ST043	NT-WR025
DC 23÷25	NT-ST044	NT-ST045	
DC 26÷30	NT-ST046	NT-ST047	NT-WR030

DRILLING

ACCESSORIES



DRS PILOT 9XD				DC	DCON	OAL	LF	LB	KG	MIID (insert)	MIID (pilot)
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05	NT-DRS-9D	D18.00-S25-05P6	●	18	25	245	189	166		SPMX05 SPGX05	DRSP06
		D19.00-S25-05P6	●	19	25	254	198	175			
06	NT-DRS-9D	D20.00-S25-06P6	●	20	25	263	207	184		SPMX06 SPGX06	DRSP06
		D21.00-S25-06P6	●	21	25	272	216	193			
		D22.00-S25-06P6	●	22	25	281	225	202			
		D23.00-S32-06P6	●	23	32	297	237	211			
		D24.00-S32-06P6	●	24	32	306	246	220			
		D25.00-S32-06P6	●	25	32	315	255	229			
07	NT-DRS-9D	D26.00-S32-07P8	●	26	32	324	264	238		SPMX07 SPGX07	DRSP08
		D27.00-S32-07P8	●	27	32	333	273	247			
		D28.00-S32-07P8	●	28	32	342	282	256			
		D29.00-S32-07P8	●	29	32	351	291	265			
		D30.00-S32-07P8	●	30	32	360	300	274			

● stock standard

Spare Parts	INSERT SCREW	INSERT WRENCH
NT-DRS-9D D _{00.00} -S ₀₀ -05P6	NT-ST059	NT-FTB06
NT-DRS-9D D _{00.00} -S ₀₀ -06P6	NT-ST061	NT-FTB06
NT-DRS-9D D _{00.00} -S ₀₀ -07P8	NT-ST062	NT-FTB07

Spare Parts	LOCKING GRAIN	SETTING GRAIN	GRAIN WRENCH
DC 18÷22	NT-ST042	NT-ST043	NT-WR025
DC 23÷25	NT-ST044	NT-ST045	
DC 26÷30	NT-ST046	NT-ST047	NT-WR030

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

DRSPILLOT

CUTTING SPEED [m/min]

	MATERIALS	HARDNESS/Rm	W.-Nr	DIN	AISI-ASTM	TRADE MARK	JP5625	JP5530	JP9635	JU6520
TURNING	P1 Free cutting steel and structural steel	< 500 N/mm ²	1.0715	9 SMn 28	1213	AVP	130÷220	130÷220		
			1.0765	36 SMnPb 14	A29	PR80				
	P2 Carbon steel and low alloy steel	500-700 N/mm ²	1.7147	20 MnCr 5	5120	-	100÷180	100÷180		
			1.0511	C 40	1040	-				
	P3 Medium alloy steel and heat treated steel	600-800 N/mm ²	1.1201	42 CrMo 4	4142, 4140	-	80÷170	80÷170		
1.6511			36 CrNiMo 4	9840	-					
P4 High alloy steel	800-1000 N/mm ²	1.1663	C 125 W	W1	-	80÷140	80÷140			
		1.3505	100 Cr 6	52100	-					
P5 Tool steel	900-1200 N/mm ²	1.2080	X 210 Cr 12	D3	K100	60÷120	60÷120			
		1.2379	X 155 CrVMo 12 1	-	K110					
M1 Ferritic stainless steel	400-700 N/mm ²	1.4016	X 6 Cr 17	430	-			90÷160		
		1.4104	X 12 CrMoS 17	430 F	-					
M2 Austenitic stainless steel (good machinability)	500-750 N/mm ²	1.4305	X 10 CrNiS 18 9	303	-			60÷130		
		1.4301	X 6 CrNi 18 10	304, 304 H	-					
M3 Austenitic stainless steel (medium machinability)	550-850 N/mm ²	1.4401	X 5 CrNiMo 17 12 2	316	-			50÷110		
		1.4462	X 2 CrNiMoN 22 5	F 51-329 A	DUPLEX					
M4 Martensitic stainless steel	650-950 N/mm ²	1.4021	X 20 Cr 13	420	-			50÷110		
		1.4410	X 2 CrNiMoN 25 7 4	F 53-329 S1	SUPER DUPLEX					
M5 PH stainless steel	800-1250 N/mm ²	1.4540	X 4 CrNiCuNb 16 4	XM-12	15-5-PH			40÷100		
		1.4542	X 5 CrNiNb 16 4	631	17-4-PH					
K1 Grey cast iron	150-250 HB	0.6020	GG-20	A48 30 B	-	130÷190	130÷190			
		0.6025	GG-25	A48 35 B	-					
K2 Nodular cast iron	150-350 HB	0.7050	GGG-50	A536 80-55-6	-	100÷140	100÷140			
		0.7070	GGG-70	A536 100-70-03	-					
N1 Aluminium alloys ≤ 12% Si		3.3547	AlMg4.5Mn	5083	Peraluman 440				200÷300	
		3.2315	AlMgSi 1	6082	Anticorodal 100					
N2 Aluminium alloys > 12% Si		3.2582	GD-AISI12	A413.0					120÷240	
			G-AISI6Cu4	319						
N3 Copper		2.0940-01	CuAl10Fe	CA952					150÷240	
		2.1176	CuPb10Sn	CA937						
N4 Bronze and brass		2.0401	Cu Zn39Pb3		OT58				150÷240	
					AMPCO 18					
THREADING										
GROOVING										
MILLING										
DRILLING										
ACCESSORIES										



DRILLING SPOTdrill

TURNING

THREADING

GROOVING

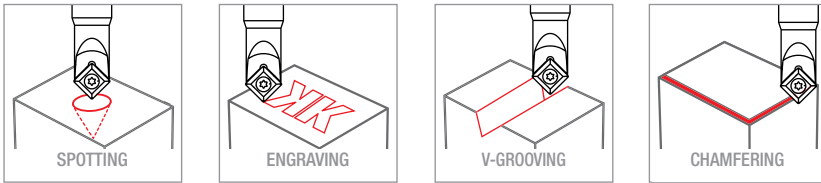
MILLING

DRILLING

ACCESSORIES





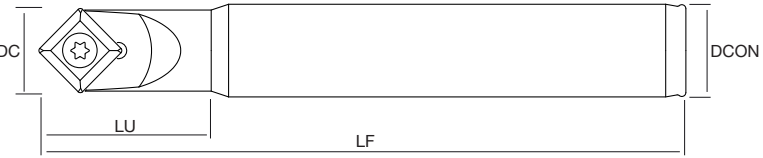





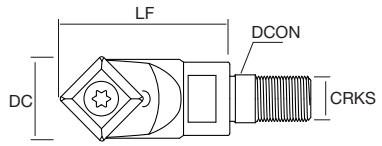


SPOTDRILL



Multipurpose system



SPOT11	SPOTDRILL Multipurpose system				ISO513	COATED				UNCOATED								
	Size	IC	S	D1		HC-1SOP	HC-1SOM	HC-1SOK	HW-1SON									
<p>4 edges</p>	11	11	3.97	4.3	P	100 220												
					M		60 140											
					K			80 180										
					N				150 300									
					S													
					H													
GRADE APPLICATION AREA	Stable machining																	
main application	General machining																	
applicable	Unstable machining																	
GENERAL 	SPOT	11R03-GP	RE 0.3	f_n	▶ 0.04	0.07	0.10	●	●	●								
				f_n	▶ 0.08	0.15	0.22											
ALUMINIUM 	11R04-AL	RE 0.4	f_n	▶ 0.06	0.09	0.12				●								
			f_n	▶ 0.14	0.22	0.30												
polished surface	11R08-AL	RE 0.8	f_n	▶ 0.06	0.09	0.12				●								
			f_n	▶ 0.14	0.22	0.30												

● stock standard feed rate for chamfering

<p>CYLINDRICAL</p>  <p>DCX=14</p>  <p>DCN=2.4</p> 			<p>MULTI PURPOSE SYSTEM</p> 					
<p>SCREW-IN</p>  <p>DCX=14</p>  <p>DCN=2.4</p> 								
<p>SPOT DRILL Multipurpose system</p>		<p>DC (DCX)</p> 	<p>DCON</p>	<p>LF</p>	<p>LU</p>	<p>CRKS</p>	<p> KG</p>	<p>MIID</p>

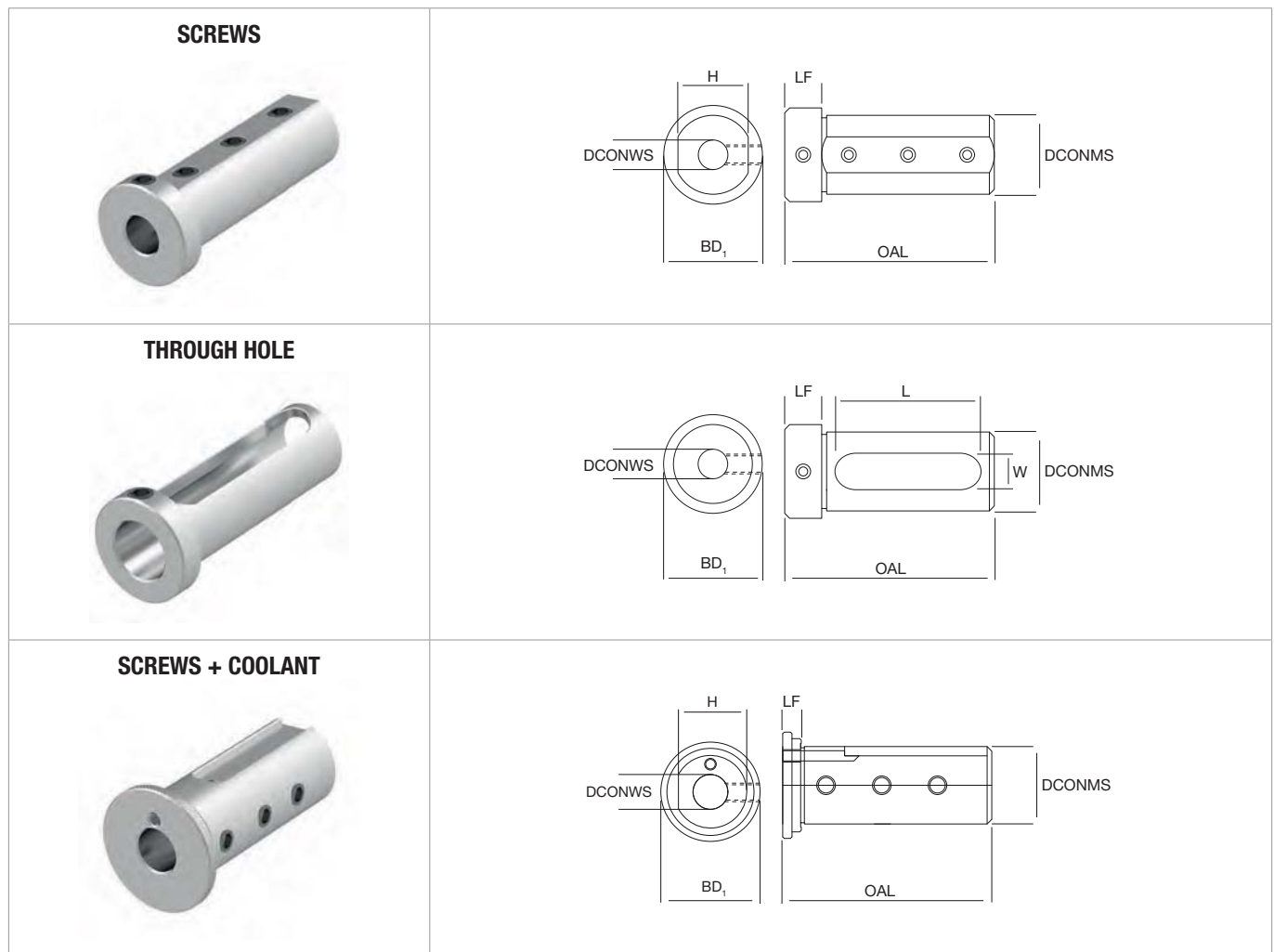
	CYLINDRICAL	SCREW-IN		DC (DCX)		DCON	LF	LU	CRKS	 KG	MIID
	NT-SPOT	D14-S16-L100	●	15.4 (14)	1	16	100	30	-	0,13	SPOT11
	NT-SPOT	D14-M08-L052	●	15.4 (14)	1	8.5	35	-	M8	0,03	SPOT11

● stock standard DCX = maximum cutting diameter DCON=minimum cutting diameter

Spare Parts	INSERT SCREW	INSERT WRENCH
		
NT-SPOT11 D□□□	NT-ST063	NT-FTB15

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

ACCESSORIES



NT-SLB Sleeves for boring bars			DCONWS	DCONMS	OAL	LF	BD ₁	H	L	W
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SCREWS	NT-SLB S03	D16-L62	●	3	16	62	7	20	14.5	-	-
	NT-SLB S04	D16-L62	●	4	16	62	7	20	14.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L80	●		32	80	15	38	29.5	-	-
	NT-SLB S05	D16-L62	●	5	16	62	7	20	14.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L80	●		32	80	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
	NT-SLB S06	D16-L62	●	6	16	62	7	20	14.5	-	-
		D20-L52	●		20	52	7	25	17.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L85	●		32	85	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
	NT-SLB S07	D20-L67	●	7	20	67	7	27	17.5	-	-
		D32-L85	●		32	85	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
	NT-SLB S08	D16-L62	●	8	16	62	7	20	14.5	-	-
		D20-L52	●		20	52	7	25	17.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L85	●		32	85	15	38	29.5	-	-
	D40-L100	●	40		100	15	46	38.0	-	-	
	D50-L100	●	50		100	15	58	48.0	-	-	

● stock standard

TURNING

THREADING

GROOVING

MILLING

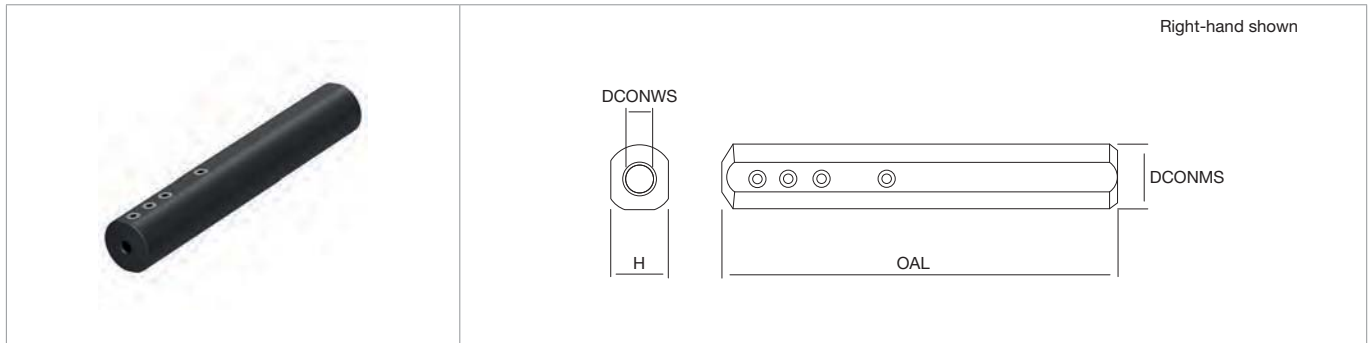
DRILLING

ACCESSORIES

TURNING
THREADING
GROOVING
MILLING
DRILLING
ACCESSORIES

NT-SLB Sleeves for boring bars			DCONWS	DCONMS	OAL	LF	BD₁	H	L	W	
SCREWS	NT-SLB S10	D20-L52	●	10	20	52	7	25	17.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L100	●		32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
		D50-L100	●		50	100	15	58	48.0	-	-
	NT-SLB S12	D20-L52	●	12	20	52	7	25	17.5	-	-
		D20-L67	●		20	67	7	27	17.5	-	-
		D32-L100	●		32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
		D50-L100	●		50	100	15	58	48.0	-	-
	NT-SLB S14	D32-L100	●	14	32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
		D50-L100	●		50	100	15	58	48.0	-	-
	NT-SLB S15	D32-L100	●	15	32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
	NT-SLB S16	D32-L100	●	16	32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
		D50-L100	●		50	100	15	58	48.0	-	-
	NT-SLB S18	D32-L100	●	18	32	100	15	38	29.5	-	-
		D40-L100	●		40	100	15	46	38.0	-	-
D50-L100		●	50		100	15	58	48.0	-	-	
NT-SLB S20	D50-L100	●	20	50	100	15	58	48.0	-	-	
NT-SLB S25	D50-L100	●	25	50	100	15	58	48.0	-	-	
THROUGH HOLE	NT-SLB S10	D16-L62	●	10	16	62	7	20	-	50	11
	NT-SLB S12	D16-L62	●	12	16	62	7	20	-	50	11
	NT-SLB S14	D20-L67	●	14	20	67	7	27	-	55	13
		D25-L64	●		25	64	6	35	-	51	12
	NT-SLB S15	D20-L67	●	15	20	67	7	27	-	55	13
		D25-L64	●		25	64	6	35	-	51	12
	NT-SLB S16	D20-L52	●	16	20	52	7	25	-	40	11
		D20-L67	●		20	67	7	27	-	55	13
		D25-L64	●		25	64	6	35	-	51	12
	NT-SLB S17	D25-L64	●	17	25	64	6	35	-	51	12
	NT-SLB S18	D25-L64	●	18	25	64	6	35	-	51	12
	NT-SLB S20	D25-L64	●	20	25	64	6	35	-	51	12
		D32-L100	●		32	100	15	38	-	77	14
		D40-L100	●		40	100	15	46	-	77	14
	NT-SLB S22	D25-L64	●	22	25	64	6	35	-	51	12
		D32-L100	●		32	100	15	38	-	77	14
D40-L100		●	40		100	15	46	-	77	14	
NT-SLB S25	D32-L100	●	25	32	100	15	38	-	77	14	
	D40-L100	●		40	100	15	46	-	77	14	
NT-SLB S32	D40-L100	●	32	40	100	15	46	-	77	14	
	D50-L100	●		50	100	15	58	-	77	14	
NT-SLB S40	D50-L100	●	40	50	100	15	58	-	77	14	
SCREWS + COOLANT	NT-SLB S04	D25-L64	●	4	25	64	6	35	23.5	-	-
	NT-SLB S05	D25-L64	●	5	25	64	6	35	23.5	-	-
	NT-SLB S06	D25-L64	●	6	25	64	6	35	23.5	-	-
	NT-SLB S07	D25-L64	●	7	25	64	6	35	23.5	-	-
	NT-SLB S08	D25-L64	●	8	25	64	6	35	23.5	-	-
	NT-SLB S09	D25-L64	●	9	25	64	6	35	23.5	-	-
	NT-SLB S10	D25-L64	●	10	25	64	6	35	23.5	-	-
	NT-SLB S11	D25-L64	●	11	25	64	6	35	23.5	-	-
	NT-SLB S12	D25-L64	●	12	25	64	6	35	23.5	-	-

● stock standard



NT-SLV
Sleeves for microboring bars

	DCONWS	DCONMS	OAL	H						
SCREWS	NT-SLV	S03-D16-L100	●	3	16	100	14			
		S04-D16-L100	●	4	16	100	14			
		S05-D16-L100	●	5	16	100	14			
		S06-D16-L100	●	6	16	100	14			

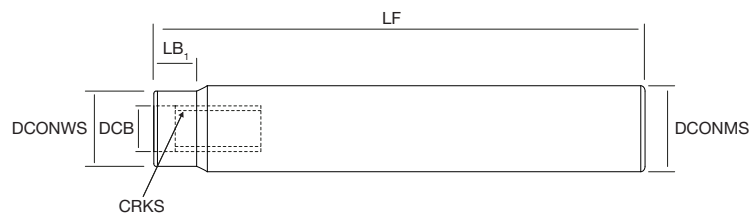
● stock standard

- TURNING
- THREADING
- GROOVING
- MILLING
- DRILLING
- ACCESSORIES

TURNING

**CYLINDRICAL
STEEL**

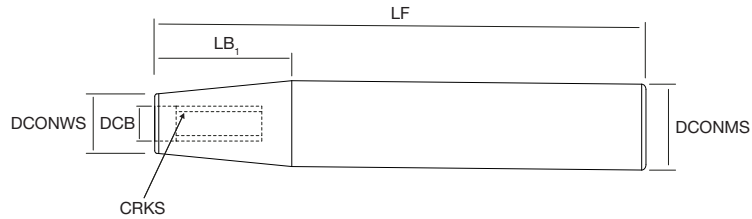
**INTERNAL
COOLANT**



THREADING

**TAPERED
STEEL**

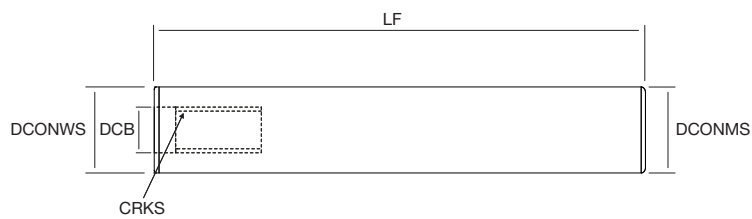
**INTERNAL
COOLANT**



GROOVING

**CYLINDRICAL
CARBIDE**

**INTERNAL
COOLANT**



MILLING

NT-ARB

Arbor for screw-in milling cutters

DCONMS CRKS DCONWS DCB LF LB1

			NT-ARB								
			DCONMS	CRKS	DCONWS	DCB	LF	LB1			
STEEL CYLINDRICAL	NT-ARB	D12-M06-120	●	12	M6	11	6.5	120	10		
		D16-M08-150	●	16	M8	14	8.5	150	10		
		D16-M08-200	●	16	M8	14	8.5	200	10		
		D20-M10-150	●	20	M10	18	10.5	150	12		
		D20-M10-250	●	20	M10	18	10.5	250	12		
		D25-M12-200	●	25	M12	23	12.5	200	15		
		D25-M12-300	●	25	M12	23	12.5	300	15		
		D32-M16-200	●	32	M16	29	17	200	18		
STEEL TAPERED	NT-ARB	D16-M06-150T	●	16	M6	11	6.5	150	40		
		D16-M06-200T	●	16	M6	11	6.5	200	40		
		D20-M08-200T	●	20	M8	14	8.5	200	50		
		D20-M08-250T	●	20	M8	14	8.5	250	50		
		D25-M10-200T	●	25	M10	18	10.5	200	60		
		D25-M10-250T	●	25	M10	18	10.5	250	60		
		D32-M12-250T	●	32	M12	23	12.5	250	70		
		D32-M12-350T	●	32	M12	23	12.5	350	70		
CARBIDE CYLINDRICAL	NT-ARB-HM	D12-M06-100	●	12	M6	-	6.5	100	-		
		D12-M06-150	●	12	M6	-	6.5	150	-		
		D12-M06-200	●	12	M6	-	6.5	200	-		
		D16-M08-100	●	16	M8	-	8.5	100	-		
		D16-M08-150	●	16	M8	-	8.5	150	-		
		D16-M08-200	●	16	M8	-	8.5	200	-		
		D20-M10-100	●	20	M10	-	10.5	100	-		

● stock standard

NT-ARB Arbor for screw-in milling cutters			DCONMS	CRKS	DCONWS	DCB	LF	LB1		
CARBIDE CYLINDRICAL	D20-M10-150	●	20	M10	-	10.5	150	-		
	D20-M10-200	●	20	M10	-	10.5	200	-		
	D20-M10-300	●	20	M10	-	10.5	300	-		
	D25-M12-100	●	25	M12	-	12.5	100	-		
	D25-M12-150	●	25	M12	-	12.5	150	-		
	D25-M12-200	●	25	M12	-	12.5	200	-		
	D25-M12-300	●	25	M12	-	12.5	300	-		

● stock standard

TURNING

THREADING

GROOVING

MILLING

DRILLING

ACCESSORIES

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