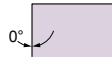




W N M P



Shape

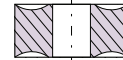


Clearance Angle



Tolerance

s ± 0.13
For l = 06, d ± 0.05 m ± 0.08
For l = 08, d ± 0.08 m ± 0.13



Fixing Chip breaker

Insert Designation	Grade	l	s	r	Catalog Nr.
WNMP 060404 NN	LT 1000	6	4.76	0.4	T0001954
WNMP 060408 NN	LT 1000	6	4.76	0.8	T0001955
WNMP 080408 NN	LT 1000	8	4.76	0.8	T0001956

NN All purpose Chipbreaker

80° Trigon shape inserts with positive chipbreaker geometry. Generates lower cutting forces, suitable for High Temperature Alloys and Stainless Steel operations.

Application Guide

	Finishing	Medium	Roughing / Interrupted cut	
WNMP 060404 NN	😊	😐	😞	● = Good 😊 = Acceptable 😞 = Not recommended Finishing: d.o.c. = 0.30 - 1.50 mm fn = 0.08 - 0.20 mm/rev Medium: d.o.c. = 0.70 - 4.50 mm fn = 0.15 - 0.45 mm/rev Roughing d.o.c. = 3.00 - 7.00 mm fn = 0.35 - 0.70 mm/rev
WNMP 060408 NN	😊	😊	😞	
WNMP 080408 NN	😊	😊	😞	

WNMP

Exotic Material
Verify Cutting Conditions

Stainless Steel Exotic Material
CNMP - TNMP - WNMP

CNMP TNMP WNMP

Machine Recommendations Guide. Details on page 10

WNMP 060404 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [mm]		Feed [mm/rev]		Amax [mm²]	V _c [m/min]		Optimal cutting conditions					
					min	max	min	max		min	max	D.O.C.	Feed	V _c			
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.2	3.0	0.11	0.23	0.60	180	330	2.0	0.18	300			
		2		190 HB		2.5		0.22	0.52		280			260			
		3		250 HB		2.5		0.20	0.48		250			240			
	Low alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.2	2.5	0.10	0.20	0.50	120	280	2.0	0.15	260			
				230 HB		2.5		0.20	0.48		250			240			
				280 HB		2.0		0.18	0.40		210			200			
				350 HB		2.0		0.18	0.36		180			180			
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.2	2.5	0.09	0.18	0.40	70	190	2.0	0.12	180			
				280 HB		2.5		0.16	0.40		150			140			
				320 HB		2.0		0.14	0.32		130			120			
				350 HB		2.0		0.14	0.26		110			110			
	Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.2	2.5	0.10	0.18	0.32	170	270	2.0	0.12	260		
240 HB					2.5		0.18		0.26	160		220			210		
Duplex		5	X2CrNi23-4, S31500	290 HB	0.2	2.0	0.09	0.14	0.20	80	150	2.0	0.12	140			
				310 HB		2.0		0.14	70		140						
Ferritic & Martensitic		6	410, X6Cr17, 17-4 PH, 430	200 HB	0.2	2.5	0.10	0.18	0.32	170	250	2.0	0.15	240			
				42 HRc		2.0		0.16	0.26		120			190	180		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.2	3.0	0.08	0.20	0.64	170	250	2.0	0.18	240			
				200 HB		3.0		0.20	0.60		160			230	220		
				250 HB		3.0		0.20	0.60		150			210	200		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.2	2.5	0.08	0.18	0.48	120	250	2.0	0.15	240			
				200 HB		2.5		0.18	0.40		230			220			
				250 HB		2.5		0.18	0.40		190			180			
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.2	2.0	0.09	0.15		25	50	2.0	0.12	40			
				250 HB		2.0		0.15	0.26		25			50	40		
				350 HB		2.0		0.15	23		45			35			
	Ti based	10	TiAl6V4	-	0.2	2.0	0.09	0.16	0.32	45	65	2.0	0.15	60			
				-		2.0		0.14	0.26		35			60	50		
				-		2.0		0.14	0.26		35			60	50		
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.2	1.8	0.05	0.12	0.20	50	100	1.5	0.11	90			
				50 HRc		1.5		0.10	0.17		40			90	1.2	0.09	80
				55 HRc		1.4		0.09	0.13		40			80	1.0	0.07	70
	Chilled Cast Iron	40	0.2	1.6	0.05	0.12	0.17	40	60	1.2	0.11	50					
	White Cast Iron	41		1.4		0.05		0.09	0.13			30	50	1.0	0.07	40	
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.2	4.0	0.10	0.30	0.70	200	400	2.0	0.20	350		

WNMP 060408 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [mm]		Feed [mm/rev]		Amax [mm ²]	V _c [m/min]		Optimal cutting conditions						
					min	max	min	max		min	max	D.O.C.	Feed	V _c				
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	2.5	0.21	0.50	1.17	180	330	2.2	0.35	240				
		190 HB		2.5		0.50		280										
		250 HB		2.5		0.45		250										
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	2.5	0.21	0.45	0.78	120	280	2.2	0.32	200				
				230 HB		2.0		0.45			180							
				280 HB		2.0		0.18			0.40			0.78	210	1.8	0.30	150
				350 HB		1.8		0.18			0.40			0.65	180	1.6	0.30	130
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.0	0.18	0.40	0.78	70	190	1.8	0.30	140				
				280 HB		2.0		0.40			0.78			150	1.8	0.30	120	
				320 HB		1.5		0.35			0.52			130	1.5	0.28	100	
				350 HB		1.5		0.35			0.52			110	1.5	0.28	90	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	2.5	0.20	0.40	0.78	170	270	2.2	0.35	190				
				240 HB		2.5		0.40		0.65				160	220	0.32	170	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	2.0	0.18	0.35	0.52	80	150	1.8	0.28	100				
				310 HB		2.0		0.35		70				140	90			
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	2.5	0.22	0.40	0.65	170	250	2.2	0.32	190				
				42 HRc		2.0		0.40		120				190	2.0	130		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	2.5	0.15	0.60	1.30	170	250	2.2	0.35	180				
				200 HB		2.5		0.60		1.17				160	230	160		
				250 HB		2.5		0.55		1.17				150	210	160		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	2.5	0.15	0.50	0.98	120	230	2.2	0.30	160				
				200 HB		2.5		0.50		0.85				190	140			
250 HB	2.5	0.50	0.78	190	140													
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.5	1.5	0.20	0.35	0.46	25	45	1.5	0.28	32				
				250 HB		1.5		0.35		25				45	30			
				350 HB		1.5		0.35		23				40	28			
	Ti based	10	TiAl6V4, T40	-	0.5	2.0	0.20	0.40	0.52	45	65	1.5	0.33	55				
-	1.5			0.35		0.46		35		55				0.30	45			
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.6	0.11	0.30	0.39	50	100	1.5	0.25	80				
				50 HRc		1.3		0.25		0.26				40	90	1.0	0.20	70
				55 HRc		1.3		0.20		0.20				40	80	1.0	0.18	60
	Chilled Cast Iron	40	0.5	1.3	0.11	0.25	0.26	40	60	1.0	0.18	50						
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.5	1.3	0.11	0.20	0.20	30	50	1.0	0.15	40				
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.5	3.0	0.20	0.60	1.80	200	400	2.2	0.40	280			

WNMP 080408 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [mm]		Feed [mm/rev]		Amax [mm ²]	V _c [m/min]		Optimal cutting conditions			
					min	max	min	max		min	max	D.O.C.	Feed	V _c	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	3.5	0.21	0.50	1.80	180	330	2.4	0.35	240	
		2		190 HB		3.5		0.50	1.80		280			220	
		3		250 HB		3.5		0.45	1.50		250			200	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	3.5	0.18	0.45	1.20	120	280	2.4	0.32	200	
				230 HB		2.8		0.45	1.20		250			180	
				280 HB		2.8		0.40	1.20		210			150	
				350 HB		2.5		0.40	1.00		180			130	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.8	0.18	0.40	1.20	70	190	2.0	0.30	140	
				280 HB		2.8		0.40	1.20		150			120	
				320 HB		2.1		0.35	0.80		130			100	
				350 HB		2.1		0.35	0.80		110			90	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	3.5	0.20	0.40	1.20	170	270	2.4	0.25	190	
				240 HB		3.5		0.40	1.00	160	220			170	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	2.8	0.18	0.35	0.80	80	150	2.0	0.28	100	
				310 HB		2.8		0.35	0.80	70	140			90	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	3.5	0.22	0.40	1.00	170	250	2.4	0.32	190	
				42 HRc		2.8		0.40	1.00	120	190			130	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	3.5	0.15	0.60	2.00	170	250	2.4	0.35	200	
				200 HB		3.5		0.60	1.80	160	230			180	
				250 HB		3.5		0.55	1.80	150	210			160	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	3.5	0.15	0.50	1.50	120	250	2.4	0.30	180	
				200 HB		3.5		0.50	1.30	230	160				
				250 HB		3.5		0.50	1.20	190	140				
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.5	2.1	0.20	0.35	0.70	25	45	1.6	0.28	32	
				250 HB		2.1		0.35	0.70	25	45			30	
				350 HB		2.1		0.35	0.70	23	40			28	
	Ti based	10	TiAl6V4	-	0.5	2.8	0.20	0.40	0.80	45	65	1.6	0.33	55	
				-		2.1		0.35	0.70	35	55			45	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.8	0.11	0.30	0.60	50	100	1.6	0.25	80	
				50 HRc		1.5		0.25	0.40	40	90			70	
				55 HRc		1.5		0.20	0.30	40	80			60	
	Chilled Cast Iron	40	0.5	1.5	0.11	0.25	0.40	40	60	1.2	0.18	50			
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.5	1.5	0.11	0.20	0.30	30	50	0.8	0.15	40	
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.5	4.2	0.20	0.60	1.80	200	400	2.4	0.40	280