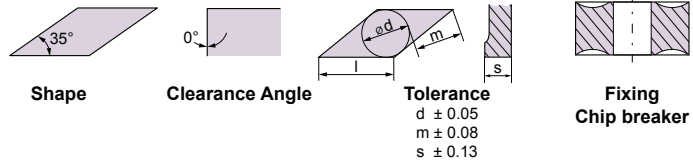




V N M G



Insert Designation	Grade	l	s	r	Catalog Nr.
VNMG 160404 NN	LT 1000	16	4.76	0.4	T0001947
VNMG 160408 NN	LT 1000	16	4.76	0.8	T0001948

NN All purpose Chipbreaker

35° shape inserts. Suitable for Semi-roughing External Copying operations.

Application Guide

	Finishing	Medium	Roughing / Interrupted cut
VNMG 160404 NN	😊	😐	😞
VNMG 160408 NN	😐	😊	😐

Finishing:	Medium:	Roughing
d.o.c. = 0.30 - 1.50 mm fn = 0.08 - 0.20 mm/rev	d.o.c. = 0.70 - 4.50 mm fn = 0.15 - 0.45 mm/rev	d.o.c. = 3.00 - 7.00 mm fn = 0.35 - 0.70 mm/rev

😊 = Good
 😐 = Acceptable
 😞 = Not recommended

Stainless Steel
 $\nearrow V_c$

$\nearrow V_c \Rightarrow$
Productivity

Feed x d.o.c.
 =
Amax

Machine Recommendations Guide. Details on page 10

VNMG 160404 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			
		4,6		230 HB		2.5		0.20	0.48		250			240			
		5,7		280 HB		2.0		0.18	0.40		210			200			
		8		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			
		10		280 HB		2.5		0.16	0.40		150			140			
		11		320 HB		2.0		0.14	0.32		130			120			
		11		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			
		14		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			
		14		310 HB		2.0		0.14	0.20		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			
		13		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			
		15		200 HB		3.0		0.20	0.60		160			230	220		
		16		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			
		17,19		200 HB		2.5		0.18	0.40		230			220			
		18,20		250 HB		2.5		0.18	0.40		190			180			
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.2	2.0	0.09	0.15	0.26	25	50	2.0	0.12	40			
		33		250 HB		2.0		0.15	0.26		25			50	40		
		34		350 HB		2.0		0.15	0.26		23			45	35		
	Ti based	10	TiAl6V4, T40	-	0.2	2.0	0.09	0.16	0.32	45	65	2.0	0.15	60			
		37		-		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		
38			50 HRc		1.5		0.10		0.17	40		90			1.2	0.09	80
38			55 HRc		1.4		0.09		0.13	40		80			1.0	0.07	70
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.2	1.6	0.05	0.12	0.17	40	60	1.2	0.11	50			
White Cast Iron		41	G-X300CrMo15	55 HRc	0.2	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		

VNMG 160408 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	4.0	0.19	0.40	1.44	180	330	2.7	0.32	240	
		190 HB		4.0		0.40		1.44	280		220				
		250 HB		4.0		0.36		1.20	250		200				
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	4.0	0.19	0.36	0.96	120	280	2.7	0.29	200	
				230 HB		3.2		0.36	0.96		250			180	
				280 HB		3.2		0.32	0.96		210			150	
				350 HB		2.8		0.32	0.80		180			130	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	3.2	0.16	0.32	0.96	70	190	2.3	0.27	140	
				280 HB		3.2		0.32	0.96		150			120	
				320 HB		2.4		0.28	0.64		130			100	
				350 HB		2.4		0.28	0.64		110			90	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	4.0	0.18	0.32	0.96	170	270	2.7	0.32	190	
				240 HB		4.0		0.32	0.80	160	220			170	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	3.2	0.16	0.28	0.64	80	150	2.3	0.25	100	
				310 HB		3.2		0.28	0.64	70	140			90	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	4.0	0.20	0.32	0.80	170	250	2.7	0.29	190	
				42 HRc		3.2		0.32	0.80	120	190			130	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	4.0	0.14	0.48	1.60	170	250	2.7	0.32	200	
				200 HB		4.0		0.48	1.44	160	230			180	
				250 HB		4.0		0.44	1.44	150	210			160	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	4.0	0.14	0.40	1.20	120	230	2.7	0.27	160	
				200 HB		4.0		0.40	1.04	190	140				
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.5	2.4	0.18	0.28	0.56	25	45	2.0	0.25	32	
				250 HB		2.4		0.28	0.56	25	45			30	
				350 HB		2.4		0.28	0.56	23	40			28	
	Ti based	10	TiAl6V4, T40	-	0.5	3.2	0.18	0.32	0.64	45	65	2.0	0.30	55	
				-		2.4		0.28	0.56	35	55			45	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	2.0	0.10	0.24	0.48	50	100	1.8	0.23	80	
				50 HRc		1.6		0.20	0.32	40	90			70	
				55 HRc		1.2		0.16	0.24	40	80			60	
	Chilled Cast Iron	40	0.5	1.6	0.10	0.20	0.32	40	60	1.4	0.16	50			
White Cast Iron	41	0.5	1.2	0.10	0.16	0.24	30	50	1.0	0.14	40				
NF	Al (>8%Si)	12	25	AISi12	130 HB	0.5	4.8	0.18	0.48	1.40	200	400	2.7	0.36	280