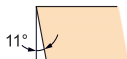
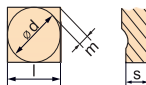
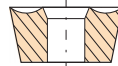


DRILLING

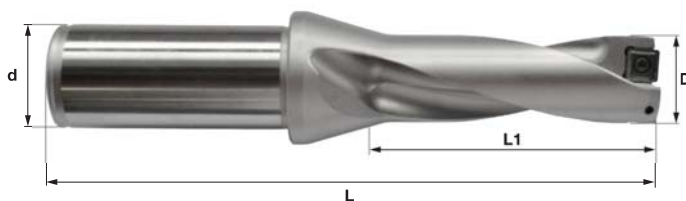
LT 30




S
P
M
G

Shape

Clearance Angle

Tolerance
 $d \pm 0.05$
 $m \pm 0.08$
 $s \pm 0.13$

**Fixing,
Chipbreaker**

LT 30 Multi-Mat™ General Usage – Standard					
Insert Designation	l	s	r	Direction	Catalog Nr.
SPMG 050204 NN LT 30	5.0	2.38	0.4	Neutral	M3003882
SPMG 060204 NN LT 30	6.0	2.38	0.4	Neutral	M3002913
SPMG 07T308 NN LT 30	7.94	3.97	0.8	Neutral	M3002914
SPMG 090408 NN LT 30	9.80	4.30	0.8	Neutral	M3002915
SPMG 110408 NN LT 30	11.50	4.80	0.8	Neutral	M3003883



Insert SPMG 050204 **				2xD			3xD		
Drill bodies Designation	D	d		L	L1	Catalog Nr	L	L1	Catalog Nr
LT DR125 S05-_D	12.5	20		94	26	M2003704	107	39	M2003718
LT DR130 S05-_D	13.0	20		94	26	M2003705	107	39	M2003719
LT DR135 S05-_D	13.5	20		96	28	M2003706	110	42	M2003720
LT DR140 S05-_D	14.0	20		96	28	M2003707	110	42	M2003721
LT DR145 S05-_D	14.5	20		99	30	M2003708	114	45	M2003722
LT DR150 S05-_D	15.0	20		99	30	M2003709	114	45	M2003723

Screw: M2003820

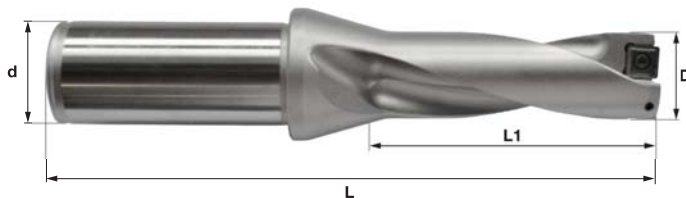
Insert SPMG 060204				2xD			3xD		
Drill bodies Designation	D	d		L	L1	Catalog Nr	L	L1	Catalog Nr
LT DR160 S06-_D	16.0	25		108	32	M2003247	124	48	M2003266
LT DR170 S06-_D	17.0	25		110	34	M2003248	127	51	M2003267
LT DR175 S06-_D	17.5	25		113	36	M2003695	131	54	M2003700
LT DR180 S06-_D	18.0	25		113	36	M2003249	131	54	M2003268
LT DR185 S06-_D	18.5	25		115	38	M2003696	134	57	M2003701
LT DR190 S06-_D	19.0	25		115	38	M2003250	134	57	M2003269
LT DR200 S06-_D	20.0	25		119	40	M2003251	139	60	M2003270
LT DR210 S06-_D	21.0	25		121	42	M2003252	142	63	M2003271

Screw: M2003823

Insert SPMG 07T308				2xD			3xD		
Drill bodies Designation	D	d		L	L1	Catalog Nr	L	L1	Catalog Nr
LT DR220 S07-_D	22.0	25		123	44	M2003253	145	66	M2003272
LT DR230 S07-_D	23.0	32		131	46	M2003255	154	69	M2003273
LT DR240 S07-_D	24.0	32		134	48	M2003256	158	72	M2003274
LT DR250 S07-_D	25.0	32		137	50	M2003257	162	75	M2003275
LT DR260 S07-_D	26.0	32		139	52	M2003258	165	78	M2003276
LT DR265 S07-_D	26.5	32		141	54	M2003698	168	81	M2003702
LT DR270 S07-_D	27.0	32		141	54	M2003259	168	81	M2003277

Screw: M2003824

** 4D for SPMG 050204 and 110408 also available on request



Insert SPMG 090408			2xD			3xD		
Drill bodies Designation	D	d	L	L1	Catalog Nr	L	L1	Catalog Nr
LT DR280 S09-_D	28.0	32	144	56	M2003260	172	84	M2003278
LT DR290 S09-_D	29.0	32	146	58	M2003261	175	87	M2003280
LT DR295 S09-_D	29.5	32	151	60	M2003699	181	90	M2003703
LT DR300 S09-_D	30.0	32	151	60	M2003262	181	90	M2003281
LT DR310 S09-_D	31.0	32	154	62	M2003263	185	93	M2003282
LT DR320 S09-_D	32.0	32	156	64	M2003264	188	96	M2003283
LT DR330 S09-_D	33.0	32	159	66	M2003265	192	99	M2003284

Screw: M2003821

Insert SPMG 110408 **			2xD*			3xD		
Drill bodies Designation	D	d	L	L1	Catalog Nr	L	L1	Catalog Nr
LT DR340 S11-_D	34.0	40	171	68	M2003710	205	102	M2003724
LT DR350 S11-_D	35.0	40	174	70	M2003711	209	105	M2003725
LT DR360 S11-_D	36.0	40	177	72	M2003712	213	108	M2003726
LT DR370 S11-_D	37.0	40	180	74	M2003713	217	111	M2003727
LT DR380 S11-_D	38.0	40	183	76	M2003714	221	114	M2003728
LT DR390 S11-_D	39.0	40	185	78	M2003715	224	117	M2003729
LT DR400 S11-_D	40.0	40	188	80	M2003716	228	120	M2003730
LT DR410 S11-_D	41.0	40	191	82	M2003717	232	123	M2003731

Screw: M2003822

* Available on request

** 4D for SPMG 050204 and 110408 also available on request

SPMG 050204 NN – LT 30

Material Group	Gr. №	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters	
					min	max	min	max	Feed	V _c
Steel	Non Alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.04	0.09	180	270	0.07	225
		2		190 HB	0.04	0.09	180	230	0.07	205
		3		250 HB	0.04	0.09	180	200	0.07	190
	Low Alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.04	0.09	120	230	0.07	175
		4,6		230 HB	0.04	0.09	120	190	0.05	155
		5,7		280 HB	0.04	0.09	100	170	0.04	135
		8		350 HB	0.04	0.09	100	150	0.04	125
	High Alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.05	0.09	70	170	0.07	120
		10		280 HB	0.05	0.09	70	150	0.07	110
		11		320 HB	0.05	0.08	60	130	0.07	95
		11		350 HB	0.05	0.08	60	100	0.07	80
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.04	0.09	170	230	0.06	200
		14		240 HB	0.05	0.09	120	210	0.07	165
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.05	0.08	70	120	0.07	95
		14		310 HB	0.05	0.08	70	120	0.07	95
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.05	0.08	100	150	0.07	125
		13		42 HRc	0.04	0.07	60	100	0.05	80
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.07	0.09	150	230	0.08	190
		15		200 HB	0.07	0.09	150	210	0.08	180
		16		250 HB	0.07	0.09	150	170	0.08	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.07	0.09	120	200	0.08	160
		17,19		200 HB	0.07	0.09	120	170	0.08	145
		18,20		250 HB	0.07	0.09	120	150	0.08	135
	High Temp. Alloys	9	31,32 Incoloy 800	240 HB	0.04	0.07	25	35	0.05	30
Hardened Mat.	Fe, Ni & Co Based	9	33 Inconel 700	250 HB	0.04	0.07	25	35	0.05	30
		34	Stellite 21	350 HB	0.04	0.07	23	35	0.07	29
	Ti Based	10	36 TiAl6V4	-	0.04	0.07	35	60	0.05	48
		37	T40	-	0.04	0.07	28	40	0.05	34
	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.04	0.07	50	90	0.05	70
		38		50 HRc	0.04	0.07	40	70	0.05	55
		38		55 HRc	0.04	0.07	30	60	0.05	45
Hardened Mat.	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.04	0.07	40	60	0.05	50
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.04	0.07	30	50	0.05	40
NF	Al (>8%Si)	12	25 AlSi12	130 HB	0.04	0.09	200	400	0.07	300

SPMG 060204 NN – LT 30

Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters	
					min	max	min	max	Feed	V _c
Steel	Non Alloyed	1	1 C35, Ck45,	125 HB	0.04	0.09	180	270	0.07	225
			2 1020, 1045,	190 HB	0.04	0.09	180	230	0.07	205
			3 1060, 28Mn6	250 HB	0.04	0.09	180	200	0.07	190
	Low Alloyed	2	6 42CrMo4,	180 HB	0.04	0.09	120	230	0.07	175
			4,6 St50, Ck60,	230 HB	0.04	0.09	120	190	0.07	155
			5,7 4140, 4340,	280 HB	0.04	0.09	100	170	0.06	135
			8 100Cr6	350 HB	0.04	0.09	100	150	0.06	125
	High Alloyed	3	10 X40CrMoV5,	220 HB	0.05	0.09	70	170	0.07	120
			10 H13, M42, D3,	280 HB	0.05	0.09	70	150	0.07	110
			11 S6-5-2, 12N19	320 HB	0.05	0.08	60	130	0.07	95
			11	350 HB	0.05	0.08	60	100	0.07	80
Stainless Steel	Austenitic	4	14 304, 316,	180 HB	0.04	0.09	170	230	0.06	200
			14 X5CrNi18-9	240 HB	0.05	0.09	120	210	0.07	165
	Duplex	5	14 X2CrNiN23-4,	290 HB	0.05	0.08	70	120	0.07	95
			14 S31500	310 HB	0.05	0.08	70	120	0.07	95
	Ferritic & Martensitic	6	12 410, X6Cr17,	200 HB	0.05	0.08	100	150	0.07	125
			13 17-4 PH, 430	42 HRc	0.04	0.07	60	100	0.05	80
Cast Iron	Grey	7	15 GG20, GG40,	150 HB	0.07	0.10	150	230	0.09	190
			15 EN-GJL-250,	200 HB	0.07	0.10	150	210	0.09	180
			16 No30B	250 HB	0.07	0.10	150	170	0.09	160
	Malleable & Nodular	8	17,19 GGG40, GGG70,	150 HB	0.07	0.10	120	200	0.09	160
			17,19 50005	200 HB	0.07	0.10	120	170	0.09	145
			18,20	250 HB	0.07	0.10	120	150	0.09	135
High Temp. Alloys	Fe, Ni & Co Based	9	31,32 Incoloy 800	240 HB	0.04	0.07	25	35	0.05	30
			33 Inconel 700	250 HB	0.04	0.07	25	35	0.05	30
			34 Stellite 21	350 HB	0.04	0.07	23	35	0.05	29
	Ti Based	10	36 TiAl6V4	-	0.04	0.07	35	60	0.05	45
			37 T40	-	0.04	0.07	28	40	0.05	34
Hardened Mat.	Steel	11	38 X100CrMo13,	45 HRc	0.04	0.07	50	90	0.05	70
			38 440C,	50 HRc	0.04	0.07	40	70	0.05	55
			38 G-X260NiCr42	55 HRc	0.04	0.07	30	60	0.05	45
	Chilled Cast Iron		40 Ni-Hard 2	400 HB	0.04	0.07	40	60	0.05	50
	White Cast Iron		41 G-X300CrMo15	55 HRc	0.04	0.07	30	50	0.05	40
NF	Al (>8%Si)	12	25 AlSi12	130 HB	0.04	0.09	200	400	0.07	300

SPMG 07T308 NN – LT 30

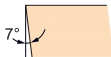
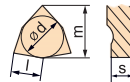
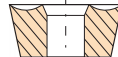
Material Group	Gr. №	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters	
					min	max	min	max	Feed	V _c
Steel	1	1	C35, Ck45,	125 HB	0.05	0.10	180	270	0.08	225
		2	1020, 1045,	190 HB	0.05	0.10	180	230	0.08	205
		3	1060, 28Mn6	250 HB	0.05	0.10	180	200	0.08	190
	2	6	42CrMo4,	180 HB	0.05	0.10	120	230	0.08	175
		4,6	St50, Ck60,	230 HB	0.05	0.10	120	190	0.08	155
		5,7	4140, 4340,	280 HB	0.05	0.10	100	170	0.07	135
		8	100Cr6	350 HB	0.05	0.10	100	150	0.07	125
	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.07	0.10	70	170	0.09	120
		10		280 HB	0.07	0.10	70	150	0.09	110
		11		320 HB	0.07	0.09	60	130	0.08	95
		11		350 HB	0.07	0.09	60	100	0.08	80
Stainless Steel	4	14	304, 316,	180 HB	0.05	0.10	170	230	0.07	200
		14	X5CrNi18-9	240 HB	0.07	0.10	120	210	0.08	165
	5	14	X2CrNiN23-4,	290 HB	0.07	0.09	70	120	0.08	95
		14	S31500	310 HB	0.07	0.09	70	120	0.08	95
	6	12	410, X6Cr17,	200 HB	0.07	0.09	100	150	0.08	125
		13	17-4 PH, 430	42 HRc	0.05	0.08	60	100	0.07	80
Cast Iron	7	15	GG20, GG40,	150 HB	0.10	0.11	150	230	0.11	190
		15	EN-GJL-250,	200 HB	0.10	0.11	150	210	0.11	180
		16	No308	250 HB	0.10	0.11	150	170	0.11	160
	8	17,19	GGG40, GGG70, 50005	150 HB	0.10	0.11	120	200	0.11	160
		17,19		200 HB	0.10	0.11	120	170	0.11	145
		18,20		250 HB	0.10	0.11	120	150	0.11	135
High Temp. Alloys	9	31,32	Incoloy 800	240 HB	0.05	0.08	25	35	0.07	30
		33	Inconel 700	250 HB	0.05	0.08	25	35	0.07	30
		34	Stellite 21	350 HB	0.05	0.08	23	35	0.07	29
	10	36	TiAl6V4	-	0.05	0.08	35	60	0.07	45
		37	T40	-	0.05	0.08	28	40	0.07	34
Hardened Mat.	11	38	X100CrMo13,	45 HRc	0.05	0.08	50	90	0.07	70
		38	440C,	50 HRc	0.05	0.08	40	70	0.07	55
		38	G-X260NiCr42	55 HRc	0.05	0.08	30	60	0.07	45
		40	Ni-Hard 2	400 HB	0.05	0.08	40	60	0.07	50
		41	G-X300CrMo15	55 HRc	0.05	0.08	30	50	0.07	40
	12	25	AlSi12	130 HB	0.05	0.10	200	400	0.08	300

SPMG 090408 NN – LT 30

	Material Group	Gr. N°	VDI Group	Material Exemples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters		
						min	max	min	max	Feed	V _c	
Steel	Non Alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.06	0.11	180	270	0.09	225	
			2		190 HB	0.06	0.11	180	230	0.09	205	
			3		250 HB	0.06	0.11	180	200	0.09	190	
	Low Alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.06	0.11	120	230	0.09	175	
			4,6		230 HB	0.06	0.11	120	190	0.09	155	
			5,7		280 HB	0.06	0.11	100	170	0.08	135	
			8		350 HB	0.06	0.11	100	150	0.08	125	
	High Alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.09	0.11	70	170	0.10	120	
			10		280 HB	0.09	0.11	70	150	0.10	110	
			11		320 HB	0.09	0.10	60	130	0.09	95	
			11		350 HB	0.09	0.10	60	100	0.09	80	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.06	0.11	170	230	0.08	200	
			14		240 HB	0.09	0.11	120	210	0.10	165	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.09	0.10	70	120	0.09	95	
			14		310 HB	0.09	0.10	70	120	0.09	95	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.09	0.10	100	150	0.09	125	
			13		42 HRc	0.06	0.09	60	100	0.08	80	
	Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.10	0.12	150	230	0.11	190
				15		200 HB	0.10	0.12	150	210	0.11	180
				16		250 HB	0.10	0.12	150	170	0.11	160
		Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.10	0.12	120	200	0.11	160
17,19				200 HB		0.10	0.12	120	170	0.11	145	
18,20				250 HB		0.10	0.12	120	150	0.11	135	
High Temp. Alloys		Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.06	0.09	25	35	0.08	30
				33		Inconel 700	250 HB	0.06	0.09	25	35	0.08
	34			Stellite 21		350 HB	0.06	0.09	23	35	0.08	29
	Ti Based	10	36	TiAl6V4	-	0.06	0.09	35	60	0.08	45	
			37	T40	-	0.06	0.09	28	40	0.08	34	
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.06	0.09	50	90	0.08	70	
			38		50 HRc	0.06	0.09	40	70	0.08	55	
			38		55 HRc	0.06	0.09	30	60	0.08	45	
			40		Ni-Hard 2	400 HB	0.06	0.09	40	60	0.08	50
	White Cast Iron		41	G-X300CrMo15	55 HRc	0.06	0.09	30	50	0.08	40	
INF	Al (>8%Si)	12	25	AlSi12	130 HB	0.06	0.11	200	400	0.09	300	

SPMG 110408 NN – LT 30

Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters			
					min	max	min	max	Feed	V _c		
Steel	Non Alloyed	1	1	C35, Ck45,	125 HB	0.08	0.14	180	270	0.11	225	
		2	1020, 1045,	190 HB	0.08	0.14	180	230	0.11	205		
		3	1060, 28Mn6	250 HB	0.08	0.14	180	200	0.11	190		
	Low Alloyed	2	6	42CrMo4,	180 HB	0.07	0.14	120	230	0.11	175	
		4,6	St50, Ck60,	230 HB	0.07	0.14	120	190	0.07	155		
		5,7	4140, 4340,	280 HB	0.07	0.14	100	170	0.07	135		
		8	100Cr6	350 HB	0.07	0.12	100	150	0.07	125		
	High Alloyed	3	10	X40CrMoV5,	220 HB	0.07	0.12	70	170	0.10	120	
		10	H13, M42, D3,	280 HB	0.07	0.12	70	150	0.10	110		
		11	S6-5-2, 12Ni19	320 HB	0.07	0.11	60	130	0.09	95		
		11		350 HB	0.07	0.10	60	100	0.08	80		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.06	0.11	170	230	0.08	200	
		14	X5CrNi18-9	240 HB	0.09	0.11	120	210	0.10	165		
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.06	0.10	70	120	0.08	95	
		14	S31500	310 HB	0.06	0.09	70	120	0.08	95		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.09	0.10	100	150	0.09	125	
		13	17-4 PH, 430	42 HRC	0.06	0.09	60	100	0.08	80		
	Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.10	0.15	150	230	0.13	190
			15	EN-GJL-250,	200 HB	0.10	0.15	150	210	0.13	180	
16			No30B	250 HB	0.10	0.15	150	170	0.13	160		
Malleable & Nodular		8	17,19	GGG40, GGG70,	150 HB	0.10	0.15	120	200	0.13	160	
		17,19	50005	200 HB	0.10	0.14	120	170	0.12	145		
		18,20		250 HB	0.10	0.14	120	150	0.12	135		
		High Temp. Alloys	Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.06	0.10	25	35	0.08
33	Inconel 700			250 HB	0.06	0.10	25	35	0.08	30		
34	Stellite 21			350 HB	0.06	0.10	23	35	0.10	29		
Ti Based	10		36	TiAl6V4	-	0.06	0.09	35	60	0.08	48	
	37		T40	-	0.06	0.09	28	40	0.08	34		
	Steel		11	38	X100CrMo13,	45 HRC	0.06	0.09	50	90	0.08	70
			38	440C,	50 HRC	0.06	0.09	40	70	0.08	55	
38		G-X260NiCr42	55 HRC	0.06	0.09	30	60	0.08	45			
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.06	0.09	40	60	0.08	50		
White Cast Iron	41	G-X300CrMo15	55 HRC	0.06	0.09	30	50	0.08	40			
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.06	0.11	200	400	0.09	300	

**W****C****M****X****Shape****Clearance Angle****Tolerance****Fixing,
Chipbreaker** $s \pm 0.13$ For $l = 04/05/06$, $d \pm 0.05$ $m \pm 0.08$ For $l = 08$, $d \pm 0.08$ $m \pm 0.13$

LT 30 Multi-Mat™ General Usage – Standard					
Insert Designation	l	s	r	Direction	Catalog Nr.
WCMX 040208 NN LT 30	4.00	2.38	0.8	Neutral	M3001122
WCMX 050308 NN LT 30	5.00	3.18	0.8	Neutral	M3001121
WCMX 06T308 NN LT 30	6.00	3.97	0.8	Neutral	M3000953
WCMX 080412 NN LT 30	8.00	4.76	1.2	Neutral	M3000954

WCMX 040208 NN – LT 30

Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters			
					min	max	min	max	Feed	V _c		
Steel	Non Alloyed	1	1	C35, Ck45,	125 HB	0.05	0.10	180	270	0.08	225	
			2	1020, 1045,	190 HB	0.05	0.10	180	230	0.08	205	
			3	1060, 28Mn6	250 HB	0.05	0.10	180	200	0.08	190	
	Low Alloyed	2	6	42CrMo4,	180 HB	0.05	0.10	120	230	0.08	175	
			4,6	St50, Ck60,	230 HB	0.05	0.10	120	190	0.08	155	
			5,7	4140, 4340,	280 HB	0.05	0.10	100	170	0.07	135	
			8	100Cr6	350 HB	0.05	0.10	100	150	0.07	125	
	High Alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.07	0.10	70	170	0.09	120	
			10		280 HB	0.07	0.10	70	150	0.09	110	
			11		320 HB	0.07	0.09	60	130	0.08	95	
			11		350 HB	0.07	0.09	60	100	0.08	80	
	Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.05	0.10	170	230	0.07	200
14				X5CrNi18-9	240 HB	0.07	0.10	120	210	0.08	165	
Duplex		5	14	X2CrNiN23-4, S31500	290 HB	0.07	0.09	70	120	0.08	95	
			14	310 HB	0.07	0.09	70	120	0.08	95		
Ferritic & Martensitic		6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.07	0.09	100	150	0.08	125	
			13	42 HRC	0.05	0.08	60	100	0.07	80		
Cast Iron		Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.09	0.11	150	230	0.10	190
				15	200 HB	0.09	0.11	150	210	0.10	180	
				16	250 HB	0.09	0.11	150	170	0.10	160	
	Malleable & Nodular	8	17,19	GGG40, GG670, 50005	150 HB	0.09	0.11	120	200	0.10	160	
			17,19		200 HB	0.09	0.11	120	170	0.10	145	
			18,20		250 HB	0.09	0.11	120	150	0.10	135	
	High Temp. Alloys	Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.05	0.08	25	35	0.07	30
33				Inconel 700	250 HB	0.05	0.08	25	35	0.07	30	
34				Stellite 21	350 HB	0.05	0.08	23	35	0.07	29	
Ti Based		10	36	TiAl6V4	-	0.05	0.08	35	60	0.07	45	
			37	T40	-	0.05	0.08	28	40	0.07	34	
			38		45 HRC	0.05	0.08	50	90	0.07	70	
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	50 HRC	0.05	0.08	40	70	0.07	55	
			38	55 HRC	0.05	0.08	30	60	0.07	45		
			40	Ni-Hard 2	400 HB	0.05	0.08	40	60	0.07	50	
	Chilled Cast Iron		41	G-X300CrMo15	55 HRC	0.05	0.08	30	50	0.07	40	
	NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.05	0.10	200	400	0.08	300

WCMX 050308 NN – LT 30

	Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters		
						min	max	min	max	Feed	V _c	
Steel	Non Alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.06	0.11	180	270	0.09	225	
			2		190 HB	0.06	0.11	180	230	0.09	205	
			3		250 HB	0.06	0.11	180	200	0.09	190	
	Low Alloyed	2	6	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.06	0.11	120	230	0.09	175	
			4,6		230 HB	0.06	0.11	120	190	0.09	155	
			5,7		280 HB	0.06	0.11	100	170	0.08	135	
			8		350 HB	0.06	0.11	100	150	0.08	125	
	High Alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.09	0.11	70	170	0.10	120	
			10		280 HB	0.09	0.11	70	150	0.10	110	
			11		320 HB	0.09	0.10	60	130	0.09	95	
			11		350 HB	0.09	0.10	60	100	0.09	80	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.06	0.11	170	230	0.08	200	
			14		240 HB	0.09	0.11	120	210	0.10	165	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.09	0.10	70	120	0.09	95	
			14		310 HB	0.09	0.10	70	120	0.09	95	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.09	0.10	100	150	0.09	125	
			13		42 HRC	0.06	0.09	60	100	0.08	80	
	Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.09	0.12	150	230	0.11	190
				15		200 HB	0.09	0.12	150	210	0.11	180
16				250 HB		0.09	0.12	150	170	0.11	160	
Malleable & Nodular		8	17,19	GGG40, GGG70, 50005	150 HB	0.09	0.12	120	200	0.11	160	
			17,19		200 HB	0.09	0.12	120	170	0.11	145	
			18,20		250 HB	0.09	0.12	120	150	0.11	135	
High Temp. Alloys	Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.06	0.09	25	35	0.08	30	
			33		Inconel 700	250 HB	0.06	0.09	25	35	0.08	30
			34		Stellite 21	350 HB	0.06	0.09	23	35	0.08	29
	Ti Based	10	36	TiAl6V4	-	0.06	0.09	35	60	0.08	45	
			37		T40	-	0.06	0.09	28	40	0.08	34
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.06	0.09	50	90	0.08	70	
			38		50 HRC	0.06	0.09	40	70	0.08	55	
			38		55 HRC	0.06	0.09	30	60	0.08	45	
	Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.06	0.09	40	60	0.08	50	
	White Cast Iron		41	G-X300CrMo15	55 HRC	0.06	0.09	30	50	0.08	40	
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.06	0.11	200	400	0.09	300	

WCMX 06T308 NN – LT 30

Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters			
					min	max	min	max	Feed	V _c		
Steel	Non Alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.06	0.12	180	270	0.09	225	
		2			190 HB	0.06	0.12	180	230	0.09	205	
		3			250 HB	0.06	0.12	180	200	0.09	190	
	Low Alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.06	0.12	120	230	0.09	175	
			4,6		230 HB	0.06	0.12	120	190	0.09	155	
			5,7		280 HB	0.06	0.12	100	170	0.09	135	
			8		350 HB	0.06	0.12	100	150	0.09	125	
	High Alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.08	0.12	70	170	0.10	120	
			10		280 HB	0.08	0.12	70	150	0.10	110	
			11		320 HB	0.08	0.11	60	130	0.09	95	
			11		350 HB	0.08	0.11	60	100	0.09	80	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.06	0.12	170	230	0.09	200	
			14		240 HB	0.08	0.12	120	210	0.10	165	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.08	0.11	70	120	0.09	95	
			14		310 HB	0.08	0.11	70	120	0.09	95	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.08	0.11	100	150	0.09	125	
			13		42 HRC	0.06	0.10	60	100	0.08	80	
	Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.09	0.13	150	230	0.11	190
				15		200 HB	0.09	0.13	150	210	0.11	180
			16		250 HB	0.09	0.13	150	170	0.11	160	
Malleable & Nodular		8	17,19	GGG40, GGG70, S0005	150 HB	0.09	0.13	120	200	0.11	160	
			17,19		200 HB	0.09	0.13	120	170	0.11	145	
			18,20		250 HB	0.09	0.13	120	150	0.11	135	
High Temp. Alloys	Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.06	0.10	25	35	0.08	30	
			33	Inconel 700	250 HB	0.06	0.10	25	35	0.08	30	
			34	Stellite 21	350 HB	0.06	0.10	23	35	0.08	29	
	Ti Based	10	36	TiAl6V4	-	0.06	0.10	35	60	0.08	45	
			37	T40	-	0.06	0.10	28	40	0.08	34	
	Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.06	0.10	50	90	0.08	70
			38		50 HRC	0.06	0.10	40	70	0.08	55	
			38		55 HRC	0.06	0.10	30	60	0.08	45	
			40	Ni-Hard 2	400 HB	0.06	0.10	40	60	0.08	50	
			41	G-X300CrMo15	55 HRC	0.06	0.10	30	50	0.08	40	
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.10	0.12	200	400	0.11	300	

WCMX 080412 NN – LT 30

	Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters		
						min	max	min	max	Feed	V _c	
Steel	Non Alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.06	0.16	180	270	0.11	225	
			2		190 HB	0.06	0.16	180	230	0.11	205	
			3		250 HB	0.06	0.16	180	200	0.11	190	
	Low Alloyed	2	6	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.06	0.16	120	230	0.11	175	
			4,6		230 HB	0.06	0.16	120	190	0.11	155	
			5,7		280 HB	0.06	0.15	100	170	0.11	135	
			8		350 HB	0.06	0.15	100	150	0.11	125	
	High Alloyed	3	10	H40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.09	0.16	70	170	0.13	120	
			10		280 HB	0.09	0.16	70	150	0.13	110	
			11		320 HB	0.09	0.14	60	130	0.11	95	
			11		350 HB	0.09	0.14	60	100	0.11	80	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.06	0.15	170	230	0.11	200	
			14		240 HB	0.09	0.15	120	210	0.12	165	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.09	0.14	70	120	0.11	95	
			14		310 HB	0.09	0.14	70	120	0.11	95	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.09	0.14	100	150	0.11	125	
			13		42 HRc	0.06	0.13	60	100	0.09	80	
	Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.10	0.18	150	230	0.14	190
				15		200 HB	0.10	0.18	150	210	0.14	180
				16		250 HB	0.10	0.18	150	170	0.14	160
		Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.10	0.18	120	200	0.14	160
17,19				200 HB		0.10	0.18	120	170	0.14	145	
18,20				250 HB		0.10	0.18	120	150	0.14	135	
High Temp. Alloys	Fe, Ni & Co Based	9	31,32	Incoloy 800	240 HB	0.06	0.13	25	35	0.09	30	
			33		Inconel 700	250 HB	0.06	0.13	25	35	0.09	30
			34		Stellite 21	350 HB	0.06	0.13	23	35	0.09	29
	Ti Based	10	36	TiAl6V4	-	0.06	0.13	35	60	0.09	45	
			37	T40	-	0.06	0.13	28	40	0.09	34	
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.06	0.13	50	90	0.09	70	
			38		50 HRc	0.06	0.13	40	70	0.09	55	
			38		55 HRc	0.06	0.13	30	60	0.09	45	
	Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.06	0.13	40	60	0.09	50	
	White Cast Iron		41	G-X300CrMo15	55 HRc	0.06	0.13	30	50	0.09	40	
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.10	0.16	200	400	0.13	300	