APENDICE B. TABLAS Y NOMENCLATURA PARA LA SELECCIÓN DE INSERTOS SANDVIK®.

NOMECLATURA DE INSERTOS

ANSI, T-MAX P

C	N	M	G	4	3	2			–	PF
1	2	3	4	5	6	7	8	9		12

ISO, T-MAX P

C	N	M	G	12	04	08			–	PF
1	2	3	4	5	6	7	8	9		12

ANSI, CoroTurn 107

C	C	M	T	3	2.5	2			–	PF
1	2	3	4	5	6	7	8	9		12

ANSI, Ceramic

C	N	G	A	4	3	2	T	03	20
1	2	3	4	5	6	7	8	10	11

ISO, Ceramic

C	N	G	A	12	04	08	T	010	20
1	2	3	4	5	6	7	8	10	11

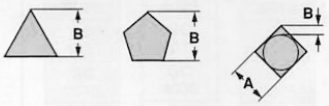
1 Insert shape

C 80°		D 55°	
K 55°		R	
S 90°		T 60°	
V 35°		W 80°	

2 Insert clearance angle

B	5°	C	7°
E	20°	N	0°
P	11°	O	Special description

3 Tolerances, inch



A: Theoretical diameter of the insert inscribed circle.
T: Thickness of the insert.
B: See figures.

Tolerances in inch

Class:	B:	A:	T:
A	±.0002	±.001	±.001
B	.0002	.001	.005
C	.0005	.001	.001
D	.0005	.001	.005
E	.001	.001	.001
F	.0002	.0005	.001
G	.001	.001	.005
H	.0005	.0005	.001
J	.0002	.002 – .005[1]	.001
K	.0005	.002 – .005[1]	.001
L	.001	.002 – .005[1]	.001
M	.002 – .005[1]	.002 – .005[1]	.005
U	.005 – .012[1]	.005 – .010[1]	.005
N	.002 – .010[1]	.002 – .004[1]	.001

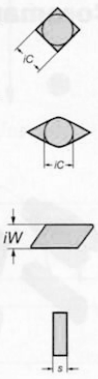
[1] The tolerance depends on the size and shape of the insert, see page A 379 for specific references.

3 Tolerances, metric

Tolerance, class	s	iC / iW
G	±0.13	±0.025
M		±0.05 – ±0.15[1]
U		±0.08 – ±0.25[1]

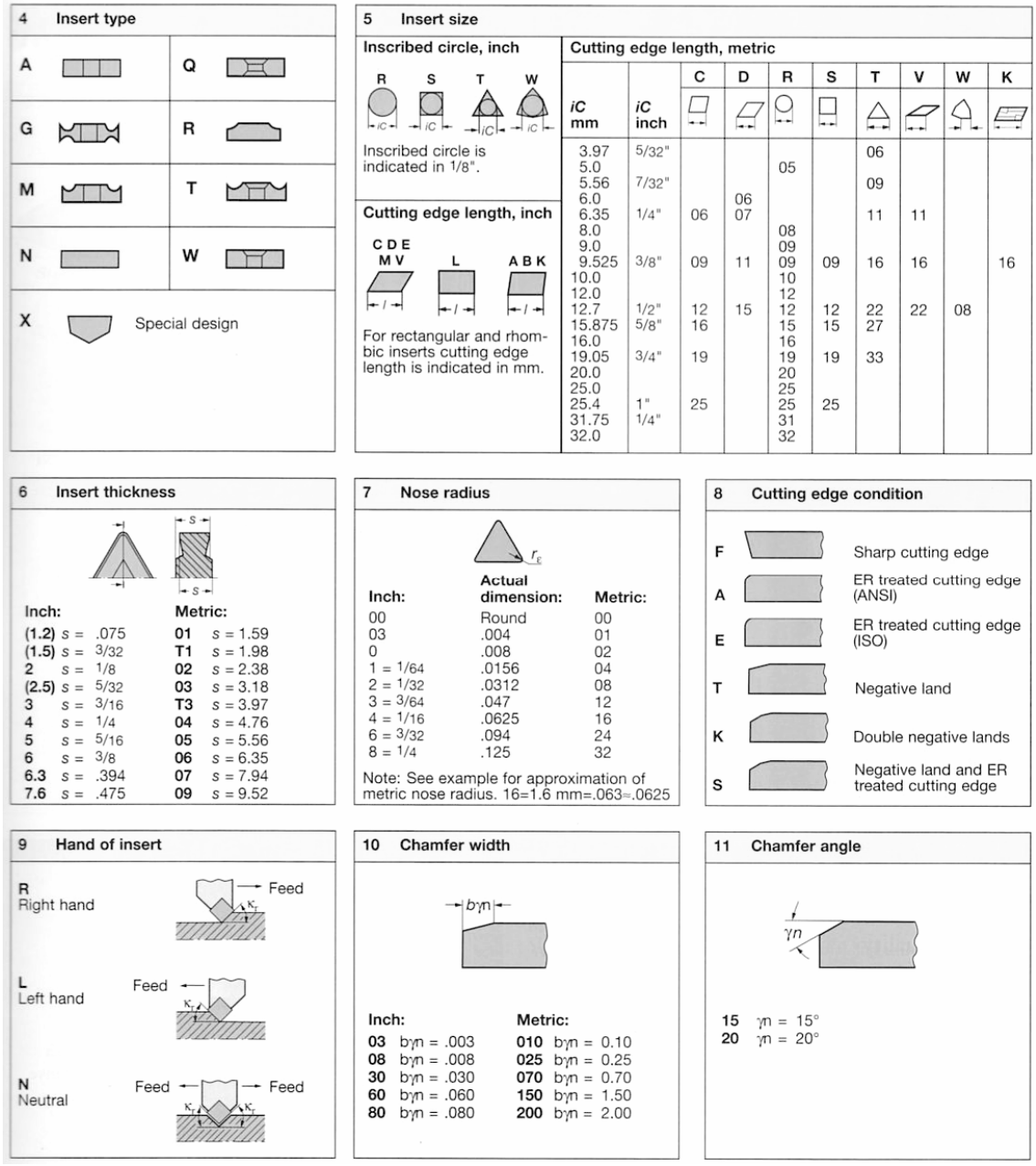
[1] Varies depending on the size of *iC*. See below.

Inscribed circle	Tolernace class	
iC mm	M	U
3.97 5.0 5.56 6.0 6.35 8.0 9.525 10.0	±0.05	±0.08
12.0 12.7	±0.08	±0.13
15.875 16.0 19.05 20.0	±0.10	±0.18
25.0 25.4	±0.13	±0.25
31.75 32.0	±0.15	±0.25



Fuente: SANDVIK® COROMANT, Turning tools, 2004.

NOMECLATURA DE INSERTOS (CONTINUACIÓN)



4 Insert type

A		Q	
G		R	
M		T	
N		W	
X	Special design		

5 Insert size

Inscribed circle, inch

R S T W

Inscribed circle is indicated in 1/8".

Cutting edge length, inch

C D E M V L A B K

For rectangular and rhombic inserts cutting edge length is indicated in mm.

Cutting edge length, metric

iC mm	iC inch	C	D	R	S	T	V	W	K
3.97	5/32"					06			
5.0				05					
5.56	7/32"					09			
6.0			06						
6.35	1/4"	06	07			11	11		
8.0				08					
9.0				09					
9.525	3/8"	09	11	09	09	16	16		16
10.0				10					
12.0				12					
12.7	1/2"	12	15	12	12	22	22	08	
15.875	5/8"	16		15	15	27			
16.0				16					
19.05	3/4"	19		19	19	33			
20.0				20					
25.0				25					
25.4	1"	25		25	25				
31.75	1/4"			31					
32.0				32					

6 Insert thickness

Inch:		Metric:	
(1.2)	s = .075	01	s = 1.59
(1.5)	s = 3/32	T1	s = 1.98
2	s = 1/8	02	s = 2.38
(2.5)	s = 5/32	03	s = 3.18
3	s = 3/16	T3	s = 3.97
4	s = 1/4	04	s = 4.76
5	s = 5/16	05	s = 5.56
6	s = 3/8	06	s = 6.35
6.3	s = .394	07	s = 7.94
7.6	s = .475	09	s = 9.52

7 Nose radius

Inch:	Actual dimension:	Metric:
00	Round	00
03	.004	01
0	.008	02
1 = 1/64	.0156	04
2 = 1/32	.0312	08
3 = 3/64	.047	12
4 = 1/16	.0625	16
6 = 3/32	.094	24
8 = 1/4	.125	32

Note: See example for approximation of metric nose radius. 16=1.6 mm=.063=.0625

8 Cutting edge condition

F	Sharp cutting edge
A	ER treated cutting edge (ANSI)
E	ER treated cutting edge (ISO)
T	Negative land
K	Double negative lands
S	Negative land and ER treated cutting edge

9 Hand of insert

R Right hand — Feed

L Left hand — Feed

N Neutral — Feed — Feed

10 Chamfer width

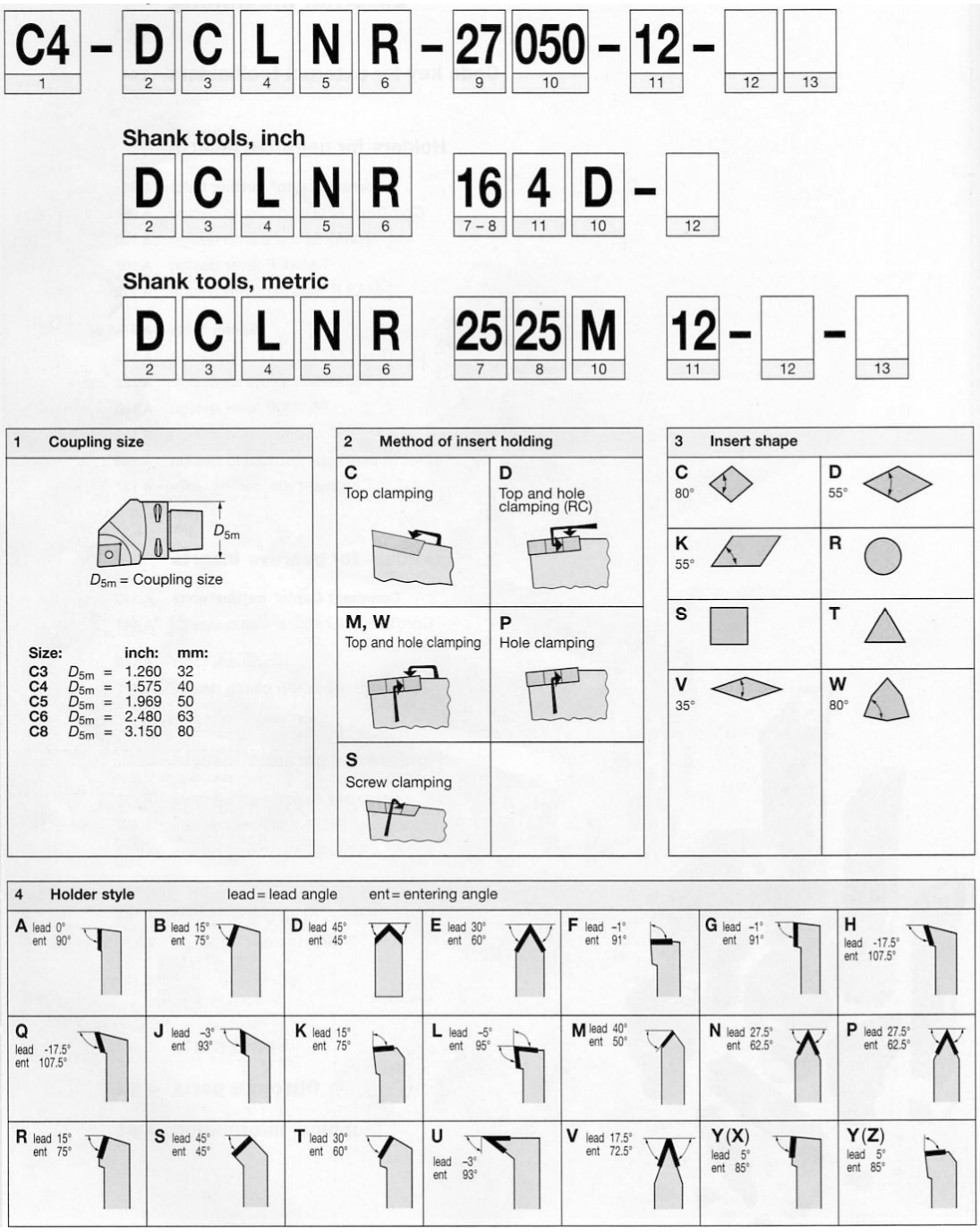
Inch:		Metric:	
03	bγn = .003	010	bγn = 0.10
08	bγn = .008	025	bγn = 0.25
30	bγn = .030	070	bγn = 0.70
60	bγn = .060	150	bγn = 1.50
80	bγn = .080	200	bγn = 2.00

11 Chamfer angle

15	γn = 15°
20	γn = 20°

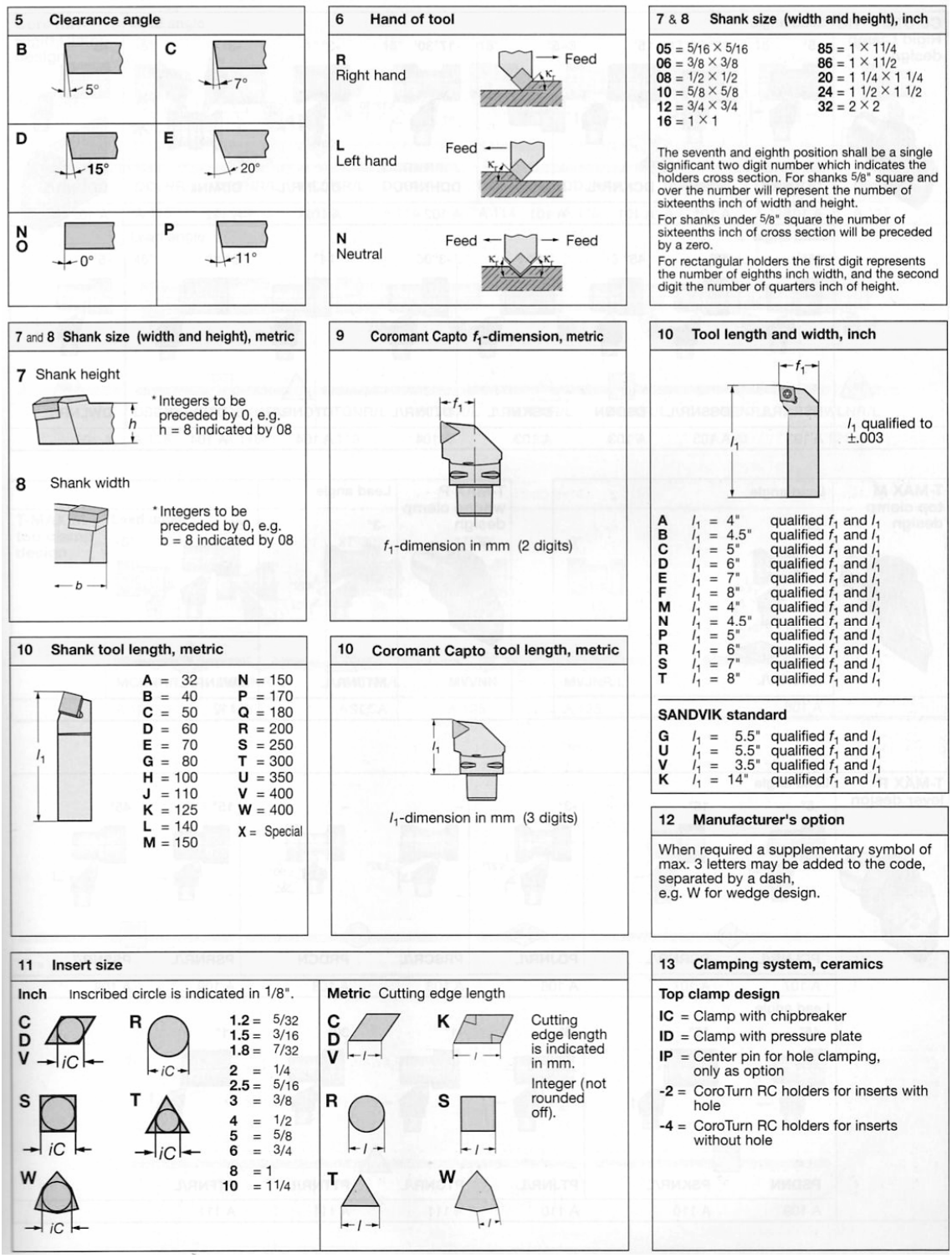
Fuente: SANDVIK® COROMANT, Turning tools, 2004.

NOMENCLATURA DE PORTAINSERTOS



Fuente: SANDVIK® COROMANT, Turning tools, 2004.

NOMENCLATURA DE PORTAINSERTOS (CONTINUACIÓN)



Fuente: SANDVIK® COROMANT, Turning tools, 2004.

RECOMENDACIÓN DE GEOMETRÍA Y GRADO.

ISO	CMC Coromant Material Classification	HB Hardness Brinell	MATERIAL	APPLICATION	Negative inserts T-MAX P Geometry	Grade	Insert type	Nose radius	Recommended a_p inch	Recommended f_n inch/rev	Recommended v_c ft/min	Positive inserts CoroTurn 107/111 (Single sided) Geometry	Grade	Nose radius
				T-MAX P / CoroTurn										
				Extra finishing: CNMG 43..										
				Finishing: CNMG 43.. / CCMT 3..										
				Medium: CNMG 43.. / CCMT 3..										
				Light roughing: CNMG 54.. / CCMT 4..										
				Roughing: CNMM 64..										
				Heavy roughing: CNMM 64..										
P	01.2	150	Non-alloy carbon steel	Extra finishing	WF	4015	G	.016	.020	.010	1410	WF	5015	.016
				Finishing	PF	4015	G	.031	.016	.008	1295	PF	4015	.016
				Medium	WM	4025	G	.031	.118	.017	1065	WM	4025	.031
				Light roughing	PR	4025	G	.047	.157	.016	950	PR	4025	.031
				Roughing	WR	4025	M	.047	.197	.026	855			
				Heavy roughing	HR	4025	M	.063	.394	.031	670			
	02.1	180	Low-alloy steel	Extra finishing	WF	4015	G	.016	.020	.010	1525	WF	1525	.016
				Finishing	PF	4015	G	.031	.016	.008	1395	PF	4015	.016
				Medium	WM	4025	G	.031	.118	.017	1080	WM	4025	.031
				Light roughing	PR	4025	G	.047	.157	.016	950	PR	4025	.031
				Roughing	WR	4025	M	.047	.197	.026	870			
				Heavy roughing	HR	4025	M	.063	.394	.031	690			
	03.11	200	High-alloy steel, annealed	Extra finishing	WF	4015	G	.016	.020	.010	1115	WF	4015	.016
				Finishing	PF	4015	G	.031	.016	.008	965	PF	4015	.016
				Medium	WM	4025	G	.031	.118	.017	720	WM	4025	.031
				Light roughing	PR	4025	G	.047	.157	.016	640	PR	4025	.031
				Roughing	WR	4025	M	.047	.197	.026	590			
				Heavy roughing	HR	4025	M	.063	.394	.031	475			
	06.2	200	Steel castings, low-alloy	Extra finishing	WF	4015	G	.016	.020	.010	720	WF	4015	.016
				Finishing	PF	4015	G	.031	.016	.008	655	PF	4015	.016
				Medium	WM	4015	G	.031	.118	.017	575	WM	4025	.031
				Light roughing	PR	4025	G	.047	.157	.016	440	PR	4025	.031
				Roughing	WR	4025	M	.047	.197	.026	395			
				Heavy roughing	HR	4025	M	.063	.394	.031	310			
M	05.21	180	Stainless steel, austenitic, bars/forged	Finishing	MF	2015	G	.031	.016	.008	820	MF	2015/1025	.016
				Medium	MM	2025	G	.047	.118	.012	590	MM	2025	.031
				Light roughing	MR	2025	G	.047	.118	.014	540	MR	2025	.047
				Roughing	MR	2025	M	.063	.197	.026	440			
				Heavy roughing	HR	4035	M	.063	.394	.031	310			
	05.52	180	Stainless steel, austenitic/ferritic, bars/forged (Duplex)	Finishing	MF	2025	G	.031	.016	.008	740	MF	2015/1025	.016
				Medium	MM	2035	G	.047	3,0	.012	510	MM	2035	.031
				Light roughing	MR	2035	G	.047	.118	.014	395	MR	2035	.047
				Roughing	MR	2025	M	.063	.197	.026	395			
				Heavy roughing	HR	235	M	.063	.394	.031	305			
S	23.22	R_m 1050	Titanium alloys	Finishing	-23	1005	G	.031	.039	.008	600	UM(G)	H10A	.016
				Medium	-23	1005	G	.031	.079	.012	300	KM	H13A	.031
				Roughing	QM	1005	G	.047	.157	.016	200	KR	H13A	.031
	20.22	350	Heat resistant alloys Ni-base	Finishing	MF	S05F	G	.031	.010	.008	325	UM(G)	H10A	.016
				Medium	-23	1005	G	.031	.118	.014	160	KM	H13A	.031
				Roughing	QM	1005	G	.047	.157	.016	80	KR	H13A	.031
K	08.2	260	Grey cast iron, high tensile	Finishing	WF	3005	G	.031	.020	.012	820	KF	3005	.016
				Medium	KM	3015	G	.047	.118	.014	740	KM	3005/3025	.031
				Roughing	KR	3015	A	.063	.157	.022	625	KR	3015/3025	.047
	09.2	250	Nodular cast iron, Pearlitic	Finishing	WF	3005	G	.031	.020	.012	770	KF	3005	.016
				Medium	KM	3005	G	.047	.118	.016	655	KM	3005/3025	.031
				Roughing	KR	3005	A	.063	.157	.022	590	KR	3015/3025	.047
H	04.1	HRC 60	Hard steel	Finishing	.NMA	7020	A	.031	.008	.039	490	.CMW	CB20	.016
				Medium	.NGA	670	A	.047	.008	.006	330			
				Roughing										
N	30.22	90	Aluminum alloys	Finishing	-23	H13A	G	.047	.118	.005	6560	AL	CD1810	.016
				Medium								AL	CD1810	.031
				Roughing								AL	H10	.047

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

RECOMENDACIÓN DE GEOMETRÍA Y GRADO (CONTINUACIÓN)

Negative and positive inserts
CERAMICS, CBN AND PCD

Recommended a_p inch	Recommended f_n inch/rev	Recommended v_c ft/min	Geometry	Grade	Insert type	Nose radius	Chamfer	Recommended a_p inch	Recommended f_n inch/rev	Recommended v_c ft/min
.020	.006	1800								
.012	.003	1788								
.031	.008	1230								
.079	.010	1148								
.020	.006	1200								
.020	.004	1247								
.049	.010	896								
.079	.012	840								
.020	.006	1155								
.020	.004	1155								
.049	.010	761								
.079	.012	718								
.020	.006	850								
.020	.004	745								
.049	.010	528								
.079	.012	495								
.012	.003	837								
.031	.008	673								
.079	.012	591								
.020	.004	791								
.049	.008	591								
.079	.012	509								
.039	.008	213								
.049	.010	184								
.079	.012	174								
.039	.008	85	**.NGN**	670	N	12	T01020	.039	.005	1417
.049	.010	46	**.NGN**	670	N	12	T01020	.079	.008	1152
.079	.012	36	**.NGN**	670	N	12	T01020	.118	.012	889
.012	.003	886	**.NGA**	650	A	12	T01020	.059	.012	1804
.031	.008	820	**.NGA**	1690	A	16	T02520	.118	.016	1640
.079	.012	755	**.NGA**	690	A	16	T02520	.118	.016	1640
.020	.004	820	**.NGA**	650	A	12	T01020	.059	.012	1312
.047	.010	558	**.NGA**	1690	A	16	T01020	.118	.016	1148
.079	.012	476	**.NGA**	690	A	16	T02520	.118	.016	1148
.008	.004	492	**.NGA**	7020	A	08	S01020	.008	.004	492
			.NGN	670	N	12	T01020	.008	.006	328
			.CMW	CB20	W	08	S01020	.008	.004	492
.020	.004	6562	**.CMW**	CD10	W	04	F	.020	.004	6562
.059	.012	6562								
.059	.012	6562								

Fuente: SANDVIK® COROMANT, Turning tools, 2004

VELOCIDADES Y AVANCES RECOMENDADOS SEGÚN MATERIAL Y GRADO.

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE								
						CT5005			CT5015			GC1525		
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
						.002	.004	.008	.002	.004	.008	.002	.004	.008
				lbs/in²	HB	Cutting speed, v_c ft/min								
P Steel	01.1	Unalloyed	C = 0,1 – 0,25 %	288,500	125	2400	1950	1600	2150	1800	1450	1850	1500	1250
	01.2		C = 0,25 – 0,55 %	306,000	150	2150	1750	1350	1900	1550	1250	1600	1350	1100
	01.3		C = 0,55 – 0,80 %	317,000	170	–	–	–	1650	1400	1100	1400	1200	960
	02.1	Low-alloy, (alloying elements ≤ 5 %)	Non-hardened	308,000	180	1750	1450	1150	1550	1300	1050	1250	1050	830
	02.12		Ball bearing steel	336,500	210	–	–	–	–	–	–	–	–	–
	02.2		Hardened and tempered	371,500	275	1300	1050	810	920	770	610	650	540	435
	02.2		Hardened and tempered	413,500	350	1050	850	650	740	620	495	520	435	350
	03.11	High-alloy (alloying elements > 5 %)	Annealed	361,500	200	–	–	–	1300	1050	820	840	710	570
	03.21		Hardened tool steel	563,500	325	–	–	–	640	530	420	465	370	290
	06.1	Castings	Unalloyed	289,000	180	–	–	–	850	700	570	740	600	470
	06.2		Low-alloy (alloying elements ≤ 5 %)	302,500	200	–	–	–	880	730	550	580	470	345
	06.3		High-alloy, alloying elements > 5 %)	385,000	225	–	–	–	660	550	410	460	365	280

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE								
						GC1525			GC1005			GC1025		
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
						.004	.008		.004	.008	.012	.004	.008	.012
				lbs/in²	HB	Cutting speed, v_c ft/min								
M Stainless steel	05.11	– Bars/forged	Non-hardened	334,500	200	950	790		1250	990	800	910	700	550
	05.12	Ferritic/martensitic	PH-hardened	514,500	330	560	490		1150	910	740	510	405	325
	05.13		Hardened	414,000	330	560	190		790	630	510	540	440	385
	05.21	– Bars/forged	Austenitic	337,000	180	720	640		1350	1050	870	870	720	550
	05.22	Austenitic	PH-hardened	517,500	330	630	560		720	580	470	510	405	325
	05.23		Super austenitic	428,000	200	485	430		810	640	520	610	520	420
	05.51	– Bars/forged	Non-weldable ≥ 0,05%C	372,500	230	–	–	–	1050	820	670	690	550	420
	05.52	Austenitic-ferritic (Duplex)	Weldable <0,05%C	445,500	260	–	–	–	920	740	600	620	455	355
	15.11	Cast	Non-hardened	304,500	200	–	–	–	–	–	–	870	720	550
	15.12	Ferritic/martensitic	PH-hardened	453,500	330	–	–	–	–	–	–	445	360	260
	15.13		Hardened	385,000	330	–	–	–	–	–	–	475	390	290
	15.21	Cast	Austenitic	316,500	180	–	–	–	–	–	–	770	590	490
	15.22	Austenitic	PH-hardened	456,000	330	–	–	–	–	–	–	445	360	260
	15.23		Super austenitic	390,000	200	–	–	–	–	–	–	570	490	405
	15.51	Cast	Non-weldable ≥ 0,05%C	329,500	230	–	–	–	–	–	–	620	455	325
	15.52	Austenitic-ferritic (Duplex)	Weldable <0,05%C	401,000	260	–	–	–	–	–	–	560	420	290

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE								
						CB7050/CB50			CC620			CC650		
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
						.004	.010	.016	.004	.010	.016	.004	.010	.016
				lbs/in²	HB	Cutting speed, v_c ft/min								
K Cast iron	07.1	Malleable cast iron	Ferritic (short chipping)	136,500	130	–	–	–	2600	2300	1950	2600	2300	1950
	07.2		Pearlitic (long chipping)	160,000	230	–	–	–	2300	1950	1650	2300	1950	1600
	08.1	Grey cast iron	Low tensile strength	158,500	180	5600	4650	3950	2650	2300	1950	2650	2300	1950
	08.2		High tensile strength	165,000	220	4800	4000	3450	2500	2100	1750	2500	2100	1750
	09.1	Nodular SG iron	Ferritic	152,000	160	–	–	–	–	–	–	2000	1800	1450
	09.2		Pearlitic	252,000	250	–	–	–	–	–	–	1650	1450	1150
	09.3		Martensitic	390,500	380	–	–	–	–	–	–	1150	1000	860

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

VELOCIDADES Y AVANCES RECOMENDADOS SEGÚN MATERIAL Y GRADO (CONTINUACIÓN).

TOUGHNESS

GC1025			GC4005			GC4015			GC4025			GC2015			GC4035			GC2025			GC235		
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead																							
.004	.012	.020	.004	.016	.031	.004	.016	.031	.004	.016	.031	.004	.016	.031	.004	.016	.031	.004	.016	.031	.004	.016	.031
Cutting speed, v_c ft/min																							
1000	830	630	1950	1400	1050	1800	1250	940	1600	1050	770	1450	980	700	1300	850	630	295	200	145	600	435	315
920	730	590	1750	1250	930	1600	1150	840	1400	940	680	1300	860	610	1200	760	570	265	180	130	540	390	285
850	690	550	1650	1200	870	1500	1100	790	1350	900	650	1200	810	580	1150	720	540	250	170	120	510	370	270
–	–	–	1900	1250	900	1750	1150	820	1450	950	680	1300	860	610	940	570	425	220	145	100	510	350	235
–	–	–	1650	1100	780	1500	990	710	1250	830	590	1150	750	530	820	500	365	195	125	85	–	–	–
–	–	–	1000	720	540	940	650	490	920	650	510	830	590	460	570	365	265	145	95	65	355	230	160
–	–	–	820	580	440	760	520	395	750	530	410	670	475	370	460	295	215	115	75	50	285	185	130
–	–	–	1400	920	680	1250	840	620	930	640	475	850	590	430	740	480	330	185	125	85	475	325	210
–	–	–	680	435	330	620	400	300	420	295	230	375	275	215	345	215	155	85	55	40	215	155	100
–	–	–	1050	730	580	940	670	530	750	550	410	690	510	365	570	425	320	460	345	265	335	255	190
–	–	–	900	630	490	820	580	445	650	435	315	590	390	280	510	305	220	410	260	180	305	220	155
–	–	–	690	470	360	630	425	330	580	390	280	520	360	250	450	290	205	360	245	165	270	190	130

TOUGHNESS

GC4025			GC2015			GC4035			GC2025			GC2035			GC235		
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead																	
.008	.016	.024	.008	.016	.024	.008	.016	.024	.008	.016	.024	.008	.016	.024	.008	.016	.024
Cutting speed, v_c ft/min																	
870	730	650	790	670	600	730	620	550	690	570	435	590	520	420	425	360	295
410	325	245	375	295	225	280	210	165	325	225	160	280	210	145	230	180	145
490	405	290	445	375	260	325	235	155	360	260	175	310	225	160	245	195	165
910	730	620	830	670	570	640	495	380	660	520	390	560	470	375	375	325	275
410	315	260	370	285	240	315	235	185	330	235	175	280	210	145	230	180	145
560	490	355	510	440	325	435	335	260	395	325	245	330	295	225	280	230	195
790	670	520	720	600	470	590	455	350	620	485	355	520	440	340	345	310	260
650	540	420	590	490	390	420	375	350	490	390	290	425	360	275	310	260	230
840	700	570	750	640	520	640	530	485	660	520	390	560	470	375	375	325	275
340	245	195	310	230	180	240	170	135	260	180	130	230	165	130	195	145	115
375	310	210	345	275	195	285	200	155	300	200	145	240	190	160	215	165	130
720	590	490	650	540	440	510	390	310	570	440	325	490	390	310	330	295	245
340	245	195	310	230	180	240	170	140	260	180	130	230	165	130	205	145	110
520	405	340	475	375	310	380	285	225	390	290	210	330	260	195	260	210	180
670	550	475	600	495	435	540	405	320	490	390	290	425	360	275	310	260	230
570	500	370	530	455	340	380	325	310	410	340	260	345	310	245	295	245	210

TOUGHNESS

CC6090			GC1690			CT5005			CT5015			GC4005			GC3015/GC4015			GC3005			GC3025			H13A		
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead																										
.008	.016	.024	.008	.016	.024	.004	.008	.012	.004	.008	.012	.004	.012	.024	.004	.012	.024	.004	.012	.024	.004	.012	.024	.004	.012	.020
Cutting speed, v_c ft/min																										
2400	1950	1650	2400	1950	1650	–	–	–	650	530	445	1250	1000	770	1100	910	700	890	750	600	790	600	405	460	410	360
2100	1600	1300	2100	1600	1300	–	–	–	455	370	310	960	830	630	870	750	570	790	700	485	590	455	325	410	360	295
2400	1950	1650	2400	1950	1650	–	–	–	1050	850	710	1400	1150	900	1250	1050	810	950	850	740	770	590	390	590	470	355
2250	1750	1400	2250	1750	1400	–	–	–	910	770	670	1100	920	750	980	820	690	920	780	650	700	510	360	460	375	310
–	–	–	1900	1450	1100	1050	810	650	840	650	530	1100	940	750	1000	780	600	980	770	590	750	570	375	445	410	310
–	–	–	1600	1150	820	800	650	570	740	630	560	980	780	600	890	720	540	850	700	520	660	490	325	410	375	290
–	–	–	1050	860	710	–	–	–	370	315	275	770	600	420	690	550	390	660	520	355	490	360	260	330	275	210

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

VELOCIDADES Y AVANCES RECOMENDADOS SEGÚN MATERIAL Y GRADO (CONTINUACIÓN).

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE		
						CD10	CD1810	H10
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead		
						.002 – .016	.006 – .031	.006 – .031
				lbs/in²	HB	Cutting speed, v_c ft/min		
N Non-ferrous metals	30.11	Aluminum alloys	Wrought or wrought and coldworked, non-aging	72,500	60	6550 (8200–820)[1]	6550 (8200–820)[1]	6550 (8200–820)[1]
	30.12		Wrought or wrought and aged	116,000	100	6550 (8200–820)[1]	6550 (8200–820)[1]	6550 (8200–820)[1]
	30.21	Aluminum alloys	Cast, non-aging	109,000	75	6550 (8200–820)[1]	6550 (8200–820)[1]	6550 (8200–820)[1]
	30.22		Cast or cast and aged	130,500	90	6550 (8200–820)[1]	6550 (8200–820)[1]	6550 (8200–820)[1]
	30.41	Aluminum alloys	Cast, 13–15% Si	138,000	130	5000 (6250–630)[1]	2500 (3150–315)[1]	1500 (1900–190)[1]
	30.42		Cast, 16–22% Si	138,000	130	2500 (3150–315)[1]	1650 (2050–205)[1]	980 (1250–125)[1]
	33.1	Copper and copper alloys	Free cutting alloys, ≥1 % Pb	101,500	110	1650 (2050–205)[1]	1650 (2050–205)[1]	1650 (2050–205)[1]
	33.2		Brass, leaded bronzes, ≤1% Pb	101,500	90	1650 (2050–205)[1]	1650 (2050–205)[1]	1650 (2050–205)[1]
	33.3		Bronze and non-leadad copper incl. electrolytic copper	254,000	100	980 (1250–125)[1]	980 (1250–125)[1]	980 (1250–125)[1]

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE								
						CC650			CC6080			CC670		
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
						.004	.008		.004	.008	.012	.004	.008	.012
				lbs/in²	HB	Cutting speed, v_c ft/min								
S Heat resistant material		Heat resistant super alloys												
	20.11	Iron base	Annealed or solution treated	435,000	200	–	–		–	–	–	–	–	–
	20.12		Aged or solution treated and aged	445,500	280	–	–		–	–	–	–	–	–
	20.21	Nickel base	Annealed or solution treated	479,500	250	1300	1050		1400	1150	970	1250	1050	880
	20.22		Aged or solution treated and aged	522,000	350	1100	860		1150	960	820	1050	870	740
	20.24		Cast or cast and aged	538,500	320	720	520		1050	870	740	970	800	680
	20.31	Cobalt base	Annealed or solution treated	478,500	200	1150	840		–	–	–	1150	830	660
	20.32		Solution treated and aged	540,000	300	980	720		–	–	–	980	720	570
	20.33		Cast or cast and aged	552,000	320	930	730		–	–	–	930	730	550
						H10			H10A			H13A		
		Titanium alloys[2]			Rm[3]	.004	.008	.012	.004	.008	.020	.004	.012	.020
	23.1	Commercial pure (99,5% Ti)		221,500	400	670	550	470	640	530	445	590	485	410
	23.21	α, near α and α+β alloys, annealed		243,000	950	280	230	180	265	215	175	245	200	165
	23.22	α+β alloys in aged cond., β alloys, annealed or aged		245,000	1050	260	195	165	255	190	160	235	175	150

ISO	CMC No.	Material		Specific cutting force k_c .016	Hardness Brinell	WEAR RESISTANCE								
						CB7020/CB20			CB7050/CB50			CC650		
						h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
						.002	.006	.010	.004	.010	.016	.004	.010	.016
				lbs/in²	HB	Cutting speed, v_c ft/min								
H Hardened material	04.1	Hard steel Extra hard steel	Hardened and tempered Hardened and tempered	470,500 804,500	*45 HRC* *60 HRC*	– 580	– 490	– 395	– 490	– 395	– 320	455 390	340 290	225 190
	10.1	Chilled cast iron	Cast or cast and aged	408,000	400	–	–	–	590	480	390	390	290	190

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

VELOCIDADES Y AVANCES RECOMENDADOS SEGÚN MATERIAL Y GRADO (CONTINUACIÓN).

TOUGHNESS

H13A
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead
.006 – .031
Cutting speed, v_c ft/min
6250 (7800–780)[1]
6250 (7800–780)[1]
6250 (7800–780)[1]
6250 (7800–780)[1]
1300 (1650–165)[1]
820 (1050–105)[1]
1500 (1900–190)[1]
1500 (1900–190)[1]
890 (1100–110)[1]

TOUGHNESS

S05F			GC1005			H10A			H13A			GC1025			H10F		
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead																	
.004	.008	.012	.004	.012	.020	.004	.012	.020	.004	.012	.020	.004	.012	.020	.004	.012	.020
Cutting speed, v_c ft/min																	
520	435	355	580	385	265	280	230	180	260	210	160	245	195	145	230	180	130
410	345	280	485	320	220	215	180	130	195	165	130	180	145	115	165	130	95
325	275	225	295	185	95	180	130	105	165	130	95	150	115	80	130	95	65
295	245	200	265	165	85	130	105	70	130	95	65	115	80	50	100	65	30
260	220	180	235	150	75	85	70	50	80	65	50	75	55	40	65	50	30
325	275	225	295	185	95	180	130	105	165	130	95	150	115	80	130	95	65
290	245	200	265	165	85	130	105	70	130	95	65	115	80	50	100	65	30
260	220	180	235	150	75	85	70	50	80	65	50	75	55	40	65	50	30

H10F			GC1025		
.004	.012	.020	.004	.012	.020
530	440	370	530	440	370
220	180	145	220	180	145
210	155	135	210	155	135

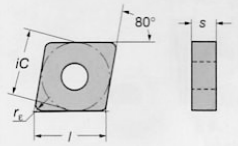
TOUGHNESS

CC670			H13A			GC4015		
h_{ex}, inch ≈ feed, f_n inch/rev. at 0° to -5° lead								
.004	.010	.016	.004	.012	.024	.004	.012	.024
Cutting speed, v_c ft/min								
465	385	310	145	100	75	195	130	80
400	330	265	–	–	–	–	–	–
390	290	190	115	65	35	145	80	45

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

INSERTOS NEGATIVOS PARA ACERO AISI 1020.

Rhombic 80°



For dimensions, see code key on page A 10.

Coromant grades

For ISO application areas, see bottom of the page.
For grade descriptions, see section H.

GC = Coated carbide/Cermet
CT = Cermet
– = Uncoated cemented carbide

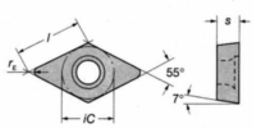
	ANSI	iC	P						M				K			S					ISO
			CT	CT	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	-	-	-	
			5005	5015	1525	4015	4025	4035	1025	2015	2025	235	5005	3005	3025	S05F	1005	H13A	H10F	H10A	
Finishing	**WF** Wiper insert. High feed machining for best surface finish. See page A 12.	**CNMG 431-WF**	1/2	☆	☆	☆	★	☆		☆	★			☆	★						CNMG 12 04 04-WF
		CNMG 432-WF		☆	☆	☆	★	☆		☆	★			☆	★						CNMG 12 04 08-WF
	PF P-Line. First choice for steel finishing.	**CNMG 321-PF**	3/8	☆	☆	☆	★	☆													CNMG 09 03 04-PF
		322-PF		☆	☆	☆	★	☆													CNMG 09 03 08-PF
		431-PF	1/2	☆	☆	☆	★	☆													12 04 04-PF
		432-PF		☆	☆	☆	★	☆													12 04 08-PF
		433-PF		☆	☆	☆	★	☆													12 04 12-PF
	MF M-Line. First choice for stainless steel finishing.	**CNMG 431-MF**	1/2						☆	★	☆					★					CNMG 12 04 04-MF
		432-MF							☆	★	☆					★					CNMG 12 04 08-MF
	KF K-Line. First choice for cast iron finishing.	**CNMG 431-KF**	1/2											★	☆						CNMG 12 04 04-KF
		432-KF												★	☆						CNMG 12 04 08-KF
		433-KF												★	☆						CNMG 12 04 12-KF
	First choice for finishing of heat resistant super alloys.	**CNGP 43(0.3)**	1/2														☆	☆			CNGP 12 04 01
		430															☆				12 04 02
		431														☆	☆	☆			12 04 04
		432														☆	☆	☆			12 04 08
				P05	P05	P15	P15	P25	P35	M15	M15	M25	M35	K05	K10	K20	S05	S15	S15	S10	S15	

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

I

NSERTOS POSITIVOS PARA ALUMINIO 6061 T6 Y COBRE UNS 11000.

Rhombic 55°



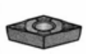
For dimensions, see code key on page A 10.

Coromant grades

For ISO application areas, see bottom of the page.
For grade descriptions, see section H.

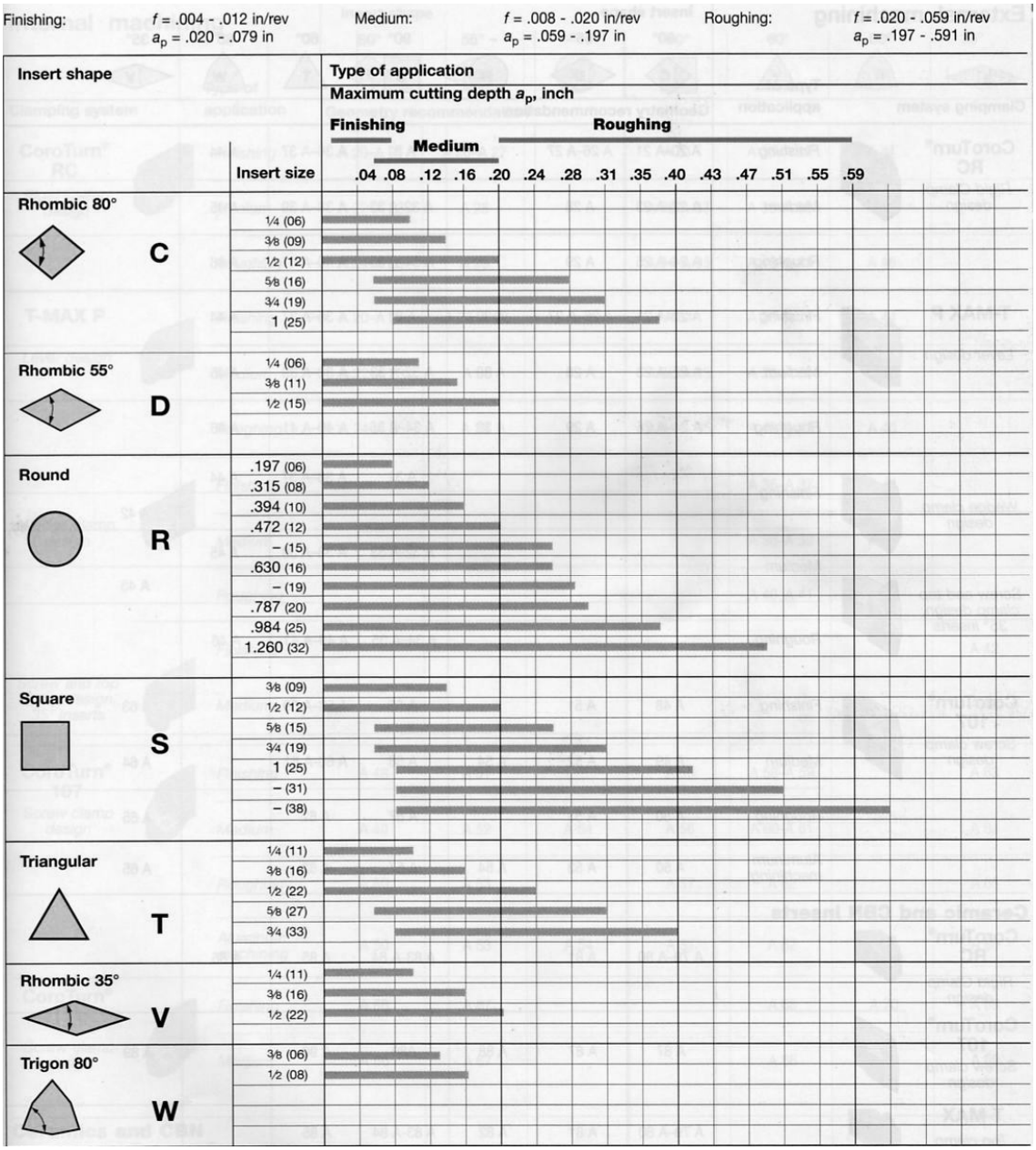
GC = Coated carbide/Cermet
CT = Cermet
– = Uncoated cemented carbide

Finishing

Insert	ANSI	iC	P CT 5005	P CT 5015	P GC 1525	P GC 4015	P GC 4025	M GC 1025	M GC 2015	M GC 2025	K CT 5005	K GC 3005	K GC 3025	K – H13A	S – H13A	S GC 1025	S GC 1005	ISO
WF **Wiper insert** High feed machining for best surface finish. See page A 12. Wiper	**DCMX 2(1.5)1-WF**	1/4	☆	☆	★	☆		☆	★		☆	★				★		DCMX 07 02 04-WF
	2(1.5)2-WF		☆	☆	★	☆		☆	★		☆	★				★		07 02 08-WF
	3(2.5)1-WF	3/8	☆	☆	★	☆		☆	★		☆	★				★		11 T3 04-WF
	3(2.5)2-WF		☆		★	☆		☆	★		☆	★				★		11 T3 08-WF
PF **P-Line** First choice for finishing in steel.	**DCMT 2(1.5)0-PF**	1/4	☆	☆			★				☆							DCMT 07 02 02-PF
	2(1.5)1-PF		☆	☆		★	☆				☆							07 02 04-PF
	3(2.5)0-PF	3/8	☆	☆			★				☆							11 T3 02-PF
	3(2.5)1-PF		☆	☆		★	☆				☆							11 T3 04-PF
	3(2.5)2-PF		☆	☆		★	☆				☆							11 T3 08-PF
MF **M-Line** First choice for stainless steel finishing.	**DCMT 2(1.5)0-MF**	1/4						★								★		DCMT 07 02 02-MF
	2(1.5)1-MF							☆	★	☆						☆	★	07 02 04-MF
	3(2.5)0-MF	3/8						★								★		11 T3 02-MF
	3(2.5)1-MF							☆	★	☆						☆	★	11 T3 04-MF
	3(2.5)2-MF							☆	★	☆						★		11 T3 08-MF
 **KF** **K-Line** First choice for cast iron finishing.	**DCMT 2(1.5)0-KF**	1/4												★	★			DCMT 07 02 02-KF
	2(1.5)1-KF											★	☆	☆	★			07 02 04-KF
	3(2.5)0-KF	3/8												★	★			11 T3 02-KF
	3(2.5)1-KF											★	☆	☆	★			11 T3 04-KF
	3(2.5)2-KF											★	☆	☆	★			11 T3 08-KF
			P05	P05	P15	P15	P25	M15	M15	M25	K05	K10	K20	K15	S15	S15	S15	

Fuente: SANDVIK® COROMANT, Turning tools, 2004.

PARÁMETROS DE AVANCE Y PROFUNIDAD DE CORTE RECOMENDADOS PARA ACABDO, MEDIO Y DESBASTE.



Fuente: SANDVIK® COROMANT, Turning tools, 2004.