Turning inserts					mal	ma	ining Ichin ble n	ing	con	ndit	ion		ions	;			(	SCN 09 T 12 (	3		L 9.52 12.1		9.5	.C 525 2.7	3.9 4.7	97	d 4.4 5.56
	SC** positive insert								HC <sup>1</sup>	(CV	/D)						НС	C1 (P	VD	)		H	Т	HC <sup>2</sup>		H	W
	⊨90	_		Ρ	С	)		3	3	2								€€	$\mathfrak{O}$			$\bigcirc$	€€	$\bigcirc$			
C.		#	-	Μ						C	) 🛟					(		) 🛟	€€	3	$\bigcirc$	$\bigcirc$	*	0			
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		-	S	Н																							
																									-		
	ISO	r	a <sub>p</sub>	f	VBC103	YB6315	YBC152	YBC203	YBC252 VRC352	YBM153	YBM253	YBD102	YB7315	YBD152	726172	YBG101	YBG105	YBG205	YB9320	YPD201	YBS103	YNG151	YNT251	YNG151C	YD101	YD201	
	SCMT09T302-HF	0.2	0.15-2.00	0.05-0.1		ŕ				ŕ	ŕ	-	ŕ		ĺ		ĺ	ŕ	-	,	-	Ĺ	-	ŕ	Ť	-	
HF	SCMT09T304-HF	0.4	0.11-2.00	0.05-0.2	3				•													(					
	SCMT09T308-HF	0.8	0.15-2.00	0.05-0.3	D		•		•																		
Finishing																											
НМ	SCMT09T304-HM	0.4	0.25-3.00	0.08-0.2	3		•		•			•		•											-		-
	SCMT09T308-HM	0.8	0.5-3.0	0.1-0.3			•		•			•		•													
	SCMT120404-HM	0.4	0.3-3.6	0.09-0.2	7		•		•																		
	SCMT120408-HM	0.8	0.6-3.6	0.12-0.3	5		0		•			•		•								[					
Medium Cut	SCMT120412-HM	1.2	0.72-3.60	0.14-0.4	3			•	•																		
XM	SCMT09T304-XM	0.4	1-2.5	0.15-0.3	0			0																			
7 6	SCMT09T308-XM	0.8	1-2.5	0.15-0.3	5 0			0																			
	SCMT09T312-XM	1.2	1-2.5	0.15-0.4	0			0																			
Madium Cut	SCMT120408-XM	0.8	1-3.0	0.15-0.3	5 0			0																			
Medium Cut	SCMT120412-XM	1.2	1-3.0	0.15-0.4	0			0																			

• Ex stock On demand

YBC152F, YBC252F, YBM153F, YBM253F available

$HC^1$	Coated carbide
HT	Uncoated cermet
HC <sup>2</sup>	Coated cermet
HW	Uncoated carbide

Tool holder				
SSBCR/L	SSDCN	SSKCR/L	SSSCR/L	S***-SSKCR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°
2		9	<u>e</u>	Ê
A279	A280	A281	A282	A339

Grade selection A42

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Cutting data 🔪 A366

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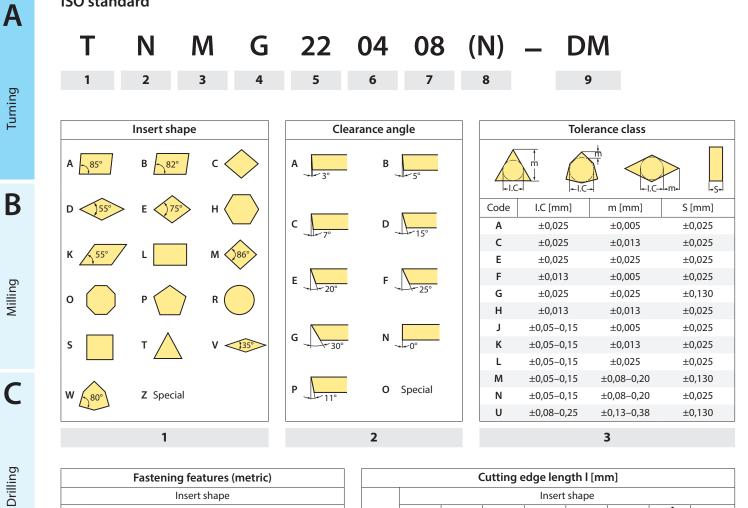
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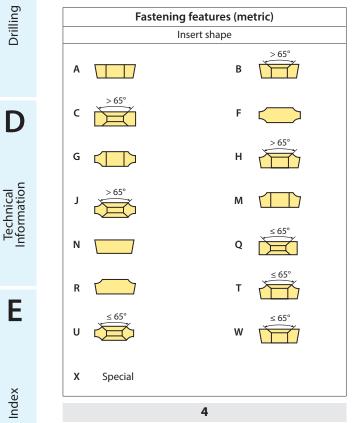
Technical Information

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**ISO standard** 



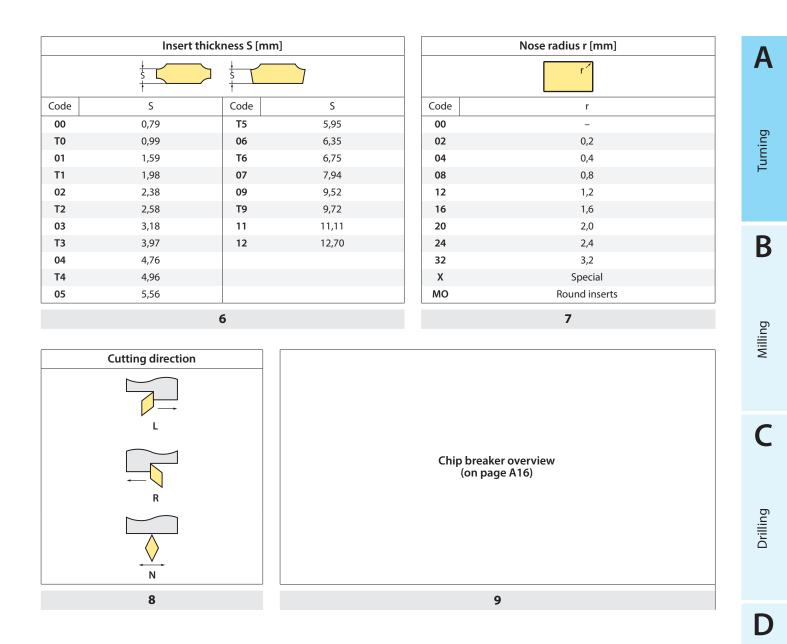


		(	Cutting e	dge len	gth l [m	m]		
			J		shape	-		
I.C [mm]	 C		→ +−d→	 S			V V	K
3,97	C	D	К	5	06	V	VV	l r
5,0			05					
5,56					09			
6,0			06					
6,35	06	07			11	11		
8,0			08					
9,525	09	11	09	09	16	16	06	16
10,0			10					
12,0			12					
12,7	12	15	12	12	22	22	08	
15,875	16		15	15	27			
16,0		19	16					
19,05	19		19	19	33			
20,0			20					
25,0	25	25	25					
25,4			25	25				
31,75			31					
32			32					
				5				

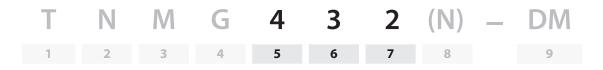


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### **ANSI standard**



	Inner circle						
Code	[mm]	Pouce					
2	6.35	0.250					
3	9.525	0.375					
4	12.7	0.500					
5	15.875	0.625					
6	19.05	0.750					
8	25.4	1.000					
	5						

Insert thickness							
Code	Code [mm] Pouce						
2	3.18	0.125					
3	4.76	0.187					
4	6.35	0.250					
5	7.94	0.313					
6	9.52	0.375					
	6						

	Nose radius							
Code	[mm]	Pouce						
0	0.2	0.008						
1	0.4	0.016						
2	0.8	0.031						
3	1.2	0.047						
4	1.6	0.063						
5	2.0	0.079						
6	2.4	0.094						
	7							



Technical Information

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# **Positive inserts** Α Finishing XF Ρ Turning Single-sided chip breaker for finishing operations in the P application field. Superb chip control with low cutting forces. B HF P K Milling Single sided chip breaker with good chip control. Suitable for finishing to medium machining of steel and cast iron. AHF M S Ρ С Ground, single sided chip breaker with good chip control. Wide range of application due to excellent balance of Drilling sharpness and cutting edge stability. EF M S D Single sided chip breaker with sharp cutting edge and large rake angle for finishing of stainless steel. Technical Information NF M S

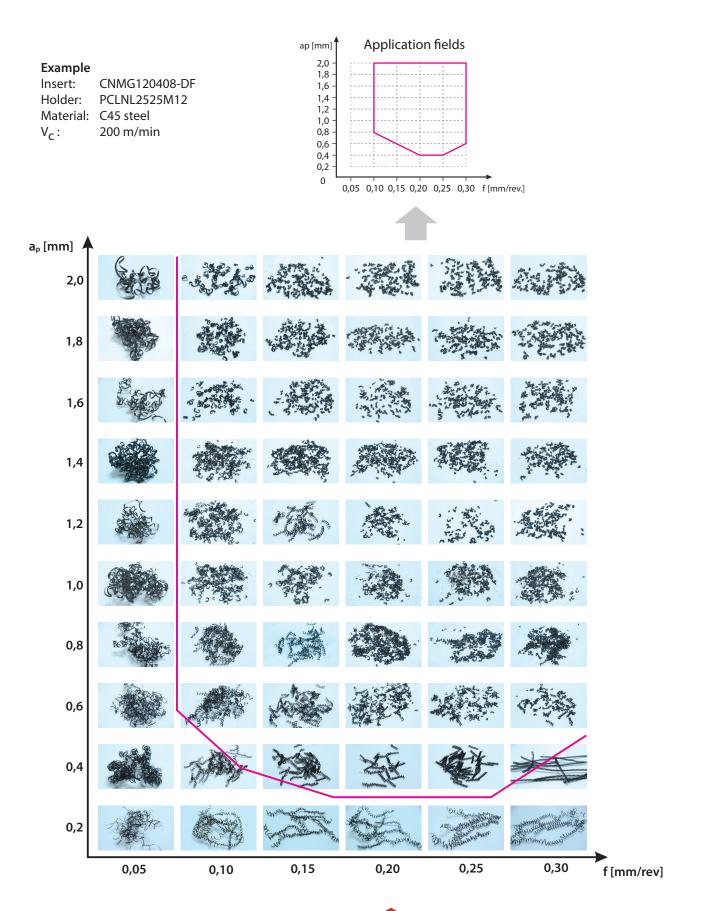
Single sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.



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### **General turning**

Application fields of chip breakers





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Α	Р Ро	sitive inserts			
	Chip breaker	Applicati	on	Application fields	Cutting edge design
Turning	SF	Fine-finishing	0	ap (mm) 4.0 3.0 2.0 1.0 0 0 0.1 0.2 0.3 0.4 0.5	7°
	HF	Finishing	0 3	ap [mm] 4.0 3.0 2.0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0	6° (0.11
В	AHF	Finishing	0	ap [mm] 4.0 3.0 2.0 1.0 0 0.1 0.2 0.3 0.4 0.5 f[mm/r]	0.13
Milling	XF	Finishing	0	ap [mm] 4.0 3.0 2.0 1.0 0 0.1 0.2 0.3 0.4 0.5	18°
С	нм	Medium machining	0	ap (mm) 4.0 3.0 2.0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4° 0.12
Drilling	ХМ	Medium machining	0	ap (mm) 4.0 3.0 2.0 1.0 0 0 0 0.1 0.2 0.3 0.4 0.5	8° (0.1
Ō	HR	Roughing		ap [mm] 6.0 $4.5$ $3.0$ $1.5$ $$ $1.5$ $0$ $0.1 0.2 0.3 0.4 0.5$	15° 0.17
D				0.1 0.2 0.3 0.4 0.3	



Λ	Coated o	emented c	arbide CVD	
A	Grade	ISO	Micro structure	Grade description
Turning	YBC103	P05 – P15		P10 grade with excellent wear resistance at higher cutting speeds. Latest sinter processes and CVD coating technologies enable a wide range of applications in the P material range.
В	YB6315	P05 – P20		CVD coated P10–P20 carbide grade for finishing to medium operation of steel, casting steel and high chrome material. Outstanding performance under high cutting speed and temperature with excellent wear resistance.
Milling	YBC152	P10 – P20		CVD coated P10–P20 carbide grade for finishing to medium operation of steel and casting steel. Outstanding performance under higher cutting speed and temperature with excellent wear resistance.
C	YBC203	P15 – P25		P20 grade with exceptional wear resistance and toughness for reliable machining operations. Ultra-modern sintering technique and CVD coating technologies allow for a wide range of applications in the P material range.
Drilling	YBC252	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
Technical Information	YBC352	P20 - P40		CVD coated P20–P40 carbide grade for roughing operation of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
	YBM153	M10 - M25		CVD coated M10–M25 carbide grade for finishing to medium application in stainless steel. High wear resistance and capability against plastic deformation at higher cutting speed.
Index	YBM253	M15 - M35		CVD coated M15–M35 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plasctic deformation at higher cutting speed.



Grade	ISO	Micro structure	Grade description
YBD102	K05 - K20		CVD coated K05–K20 carbide substrate. Optimized for medium operation of cast iron, special nodular cast iron and hard steel at high cutting speed.
B7315	K10 - K25		CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Improved wear resistance and toughness at high cutting speed.
′BD152	K10 - K25		CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Good wear resistance and toughness at higher cutting speed.
YBD152C	K10 - K25		Thick Al2O3 CVD coated K05–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Higher wear resistance and toughness at higher cutting speed in combination with TC chip breaker.

### Coated cemented carbide CVD

### Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG101	N05 - N20		PVD coated N05–N20 carbide substrate for finishing to semi-finishing in aluminium materials. Coating only on the top face, in combination with the aluminium chip breakers, prevents built-up edges and gives a smooth cut.
YBG102	S05 - S15		PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
YBG105	S05 - S20		PVD multilayer coated S05–S20 carbide substrate for finishing to medium application of super alloy material but also stainless steel. Good wear resistance and thermal stability in a wide application field.



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# Coated cemented carbide PVD

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Grade	ISO	Micro structure	Grade description
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (milling). Excellent wear resistance and thermal stability in a wide range of applications.
YB9320	P10 - P30 M10 - M25		PVD multilayer coated P10–P30/M10–M25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (grooving/milling). Optimised coating stability for higher wear resistance and thermal stability in a wide range of applications.
YPD201	S20 – S30	2	Carbide grade for semi-roughing to chip breaking of high-strength and high-alloy materials. High-performance grade with high wear resistance. Balanced hardness and internal stress ratio provide a wide range of applications.
YBS103	S10 – S20		Turning grade for processing nickel-base materials. A special carbide substrate and the latest PVD coating technology enable a very good wear behaviour and high thermal stability.

Ceramic

	Grade	ISO	Micro structure	Grade description
Technical Information	CA1000	K10 - K25 H10 - H25		Uncoated H10–H25/K10–K25 mixed ceramic grade for finishing to medium operation in hardened steel and nodular cast iron. Good wear resistance and toughness.
	CM1000	K10 - K25 H10 - H25		Coated H1–H25/K10–K25 mixed ceramic grade for finishing to medium operations in hardened steel, tool steel, HSS material and nodular cast iron. Good wear resistance and toughness.
Index	CN1000	K05 - K15		Uncoated K05-K15 Si3N4 ceramic grade for finishing to medium operation in grey cast iron. Good wear resistance and thermal stability.



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Grade	ISO	Micro structure	Grade description
CS1000	S05 – S20		Uncoated SiAION ceramic grade for medium machining to roughing of nickel- and cobalt- based alloys at medium to low cutting speeds.
CW1400	S10 – S20 H10-H20		Uncoated whisker ceramic grade for medium and low speed cutting in HSS steel, high chrome steel and cobalt-base alloy also with interrupted cut. Good wear resistance, notch wear resistance and thermal stability.
CW1800	S10 – S25		Uncoated whisker ceramic grade for finishing to rough operations in Ni-base alloy material like Inconel, Nimonic or Hastelloy. Good wear resistance, notch wear resistance and thermal stability.

### **Uncoated cemented carbide**

Grade	ISO	Micro structure	Grade description	
YD101	N05 - N20 K05 - K20		Uncoated N05–N20/K05–K20 carbide substrate for fine to medium application in aluminum and other material.	Drilling
YD201	N10 - N30 K10 - K30		Uncoated N10–N30/K10–K30 carbide substrate for medium application in aluminum and other material.	<b>D</b>
CBN				Technical Information
Grade	ISO	Micro structure	Grade description	

YCB112	S10 – S20
	J10 - J20

Uncoated, brazed S10–S20 CBN grade for fine finishing operations on hardened steel and super alloys. Excellent wear resistance and thermal stability.



# General turning Grade overview

Λ	CBN			
A	Grade	ISO	Micro structure	Grade description
Turning	YCB113	H01 - H10		Uncoated, brazed H01–H10 CBN grade for fine finishing operation in hardened steel with continuous cut. High wear resistance and productivity at higher cutting speed.
В	YCB121	H10 - H25		Uncoated, brazed H10–H25 CBN grade for fine to medium application in hardened steel from continuous to light interrupted cut. Good wear resistance and toughness for universal use.
Milling	YCB131	H20 - H35		Uncoated, brazed H20–H35 CBN grade for fine to medium application in hardened steel with interrupted cut. Good wear resistance and optimized toughness for safe process.
C	YCB113C	H01 - H10		Coated, brazed H01–H10 CBN grade for fine finishing operations on hardened steel with a continuous cut. High wear resistance and productivity at higher cutting speeds
Drilling	ҮСВ121С	H10 - H25		Coated, brazed H10–H25 CBN grade for fine to medium machining operations on hardened steel with a continuous to partially interrupted cut. Good wear resistance and toughness for universal application.
Technical Information	YCB131C	H20 - H25		Coated, brazed H20–H35 CBN grade for fine to medium machining operations on hardened steel with an interrupted cut. Good wear resistance and optimum toughness for reliable operations.
Tec Infor	YCB215	K10 - K20		Uncoated, brazed K10 –K20 CBN grade for fine to medium machining operations on cast iron. Excellent wear resistance and thermal conductivity.
Index	YZB630	H20 - H30		Uncoated H20–H30 solid CBN grade for medium machining operations on hardened steel with a slight to medium interrupted cut. Excellent combination of wear resistance and thermal stability.



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Turning

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<b>CBN</b>
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Grade	ISO	Micro structure	Grade description
YZB630C	H20 - H30		Coated H20–H30 solid CBN grade for medium machining operations on hardened steel with a slight to medium interrupted cut. Excellent combination of wear resistance and thermal stability.
YZB223	K10 - K25		Uncoated H10–H25/K10–K25 mixed ceramic grade for finishing to medium operation in hardened steel and nodular cast iron. Good wear resistance and toughness.

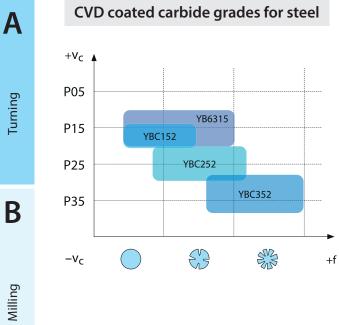
PCD

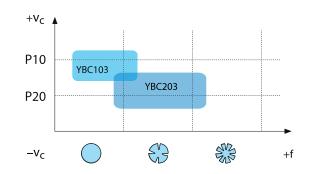
Grade	ISO	Micro structure	Grade description
YCD421	N01 - N10		Uncoated, brazed N01–N10 PCD grade for fine finishing operation of aluminum alloys less than 12 % Si, composites, copper/magnesium and other alloys. Medium grain size grade with good wear resistance for a wide application field.

### Cermet

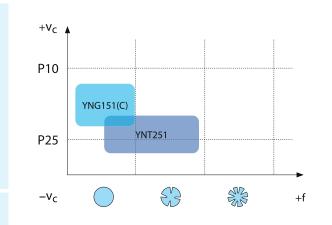
Grade	ISO	Micro structure	Grade description	
YNG151	P05 – P15		Uncoated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good resistance against plastic deformation for good surface finishing.	D
YNG151C	P05 – P15		PVD coated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good wear resistance and capability against plastic deformation for good surface roughness.	Technical Information
YNT251	P10 - P25		Uncoated P10–P25 cermet grade for fine finishing to medium operation of steel and stainless steel. Good wear resistance and toughness. Suitable also in light interrupted cut.	E

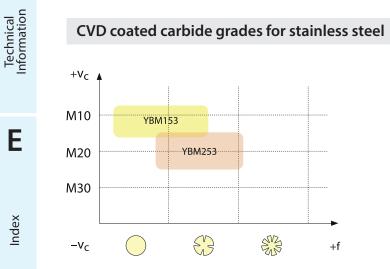






Cermet grades for steel





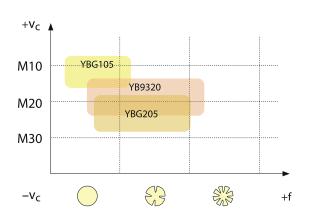


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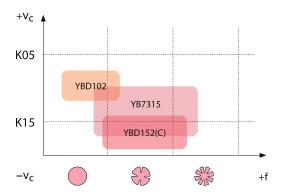
Drilling

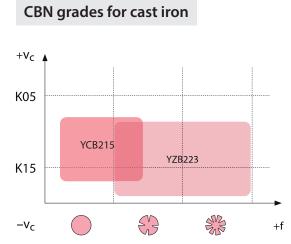
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PVD coated carbide grades for stainless steel



### CVD coated carbide grades for cast iron

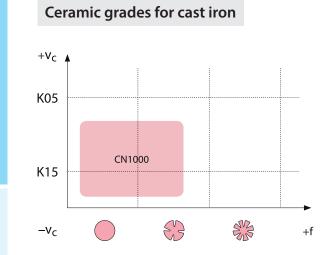




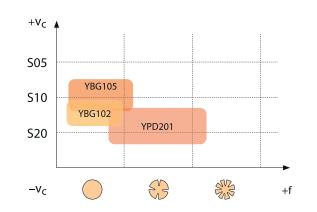


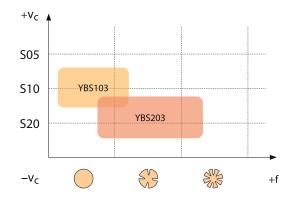
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PVD coated carbide grades for superalloys





Technical Information

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Turning

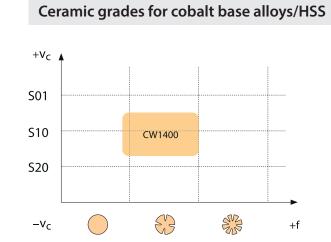
В

Milling

С

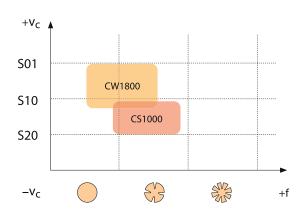
Drilling

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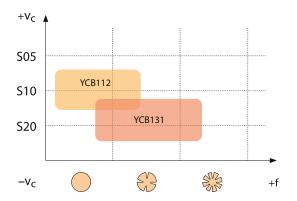




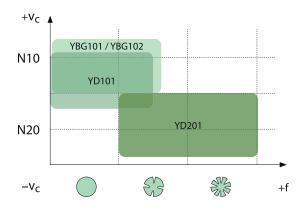
## Ceramic grades for nickel base alloys



CBN grades for superalloys

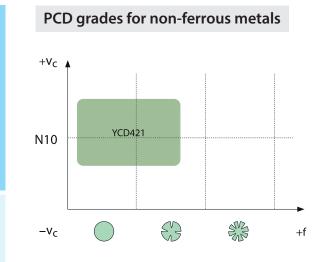


### Carbide grades for non-ferrous metals





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Α

Turning

Β

Milling

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Drilling

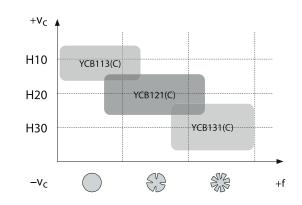
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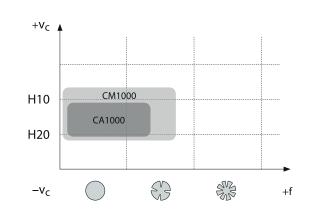
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CBN grades for hardened steel



Ceramic grades for hardened steel





**General turning** Application fields of grades

#### HC<sup>1</sup> (CVD) HC<sup>1</sup> (PVD) HC<sup>2</sup> ISO ΗТ Ceramic нw CBN PCD P01 YNG151C YNG151 **YBC103** YB6315 P10 **YNT251** YBC152 YBC203 YBC252 Ρ P20 YBC352 P30 P40 M01 YBG105 YNG151 YNG151C M10 YBM153 YBG205 YB9320 YBM253 Μ M20 M30 M40 K01 CN1000 YCB215 YBD102 YZB223 YBD152 YBD152C YB7315 K10 Κ YD201 K20 K30 N01 YD101 **YCD421** N10 YBG102 YBG101 Ν YD201 N20 N30 S01 YCB112 YBS103 YBG105 CS1000 YBG102 YCB131 S10 CW1400 CW1800 YPD201 YB9320 S S20 Technical Information S30 H01 YCB113(C) YCB121(C) H10 Η YCB131(C) H20 H30 Ρ Steel Ν Non-ferrous metals HC<sup>1</sup> Coated carbide ΗT Uncoated cermet Μ Stainless steel S Heat-resistant alloys HC<sup>2</sup> Coated cermet Hardened materials Cast iron н Κ HW Uncoated carbide

### Application fields of grades – general turning



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