Turning inserts

Ideal machining conditions

Normal machining conditionsUnfavourable machining conditions

D١	1 **	L	I.C	S	d
11	04	11.6	9.525	4.76	3.81
15	04	15.5	12.7	4.76	5.16
15	06	15.5	12.7	6.35	5.16

DN** negative insert									НС	C1 (C	VD)					НС	(P	VD))		НТ	ŀ	HC ²	ŀ	lW
	. 550			Р	, C		0	€3 €	₩									€3	€3			0 8	30			
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	r			S		Н		-							\dashv) 😘	£3	83					○ ↔	
		S		Н		Н		-	+	+	+	+	-		\dashv			, VI		V			t			
						Н		+		+	_	+			\dashv			-					+			
	ISO	r	a _p	f	YBC103	YB6315	YBC152	YBC203	YBC252	YBC352	YDMAN	YBM253	YBD102 VB7315	YBD152	YBD152C	YBG101	YBG105	YBG205	YB9320	YPD201	YBS103	YNG151	YNG151C		YD101 YD201	
	DNMG110404-EF	0.4	0.1-1.5	0.05-0.2	20					C								•								
EF	DNMG110408-EF	0.8	0.1-1.5	0.1-0.4	1					C)							•								
Li	DNMG150404-EF	0.4	0.1-1.5	0.05-0.3	30													•								
	DNMG150408-EF	0.8	0.1-1.5	0.1-0.4	1													•								
	DNMG150604-EF	0.4	0.1-1.5	0.05-0.3	30					•								•								
Finishing	DNMG150608-EF	8.0	0.1-1.5	0.1-0.4	1					•	•							•								
	DNMG150612-EF	1.2	0.1-1.5	0.15-0.5	50	L												•					L			
FM	DNMG150604L-FM	0.4	0.5-3.0	0.05-0.3	30				•									•								
	DNMG150604R-FM	0.4	0.5-3.0	0.05-0.3	30		•		•									•								
	DNMG150608L-FM	0.8	0.5-3.0	0.1-0.5	5		0		•									•								
Finishing	DNMG150608R-FM	0.8	0.5-3.0	0.1-0.5	5		•		•									•								
NF	DNEG150404-NF	0.4	0.2-3.0	0.05-0.3	30												0									
INI	DNEG150408-NF	0.8	0.2-3.0	0.1-0.4	1												0									
	DNEG150604-NF	0.4	0.2-3.0	0.05-0.3	30											(•								0	
	DNEG150608-NF	0.8	0.2-3.0	0.1-0.4	1]	C	•								0	
Finishing																										
NGF	DNEG150608-NGF	0.8	0.2-3.0	0.05-0.4	10												•									
	DNEG150612-NGF	1.2	0.2-3.0	0.1-0.5	5												•									
Finishing																										

• Ex stock On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide

HT Uncoated cermet HC² Coated cermet

HW Uncoated carbide

Tool holder						
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	A***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
	30	070	A			···
A231	A240	A241	A254	A255	A326	A327

System code A48

Grade selection A42

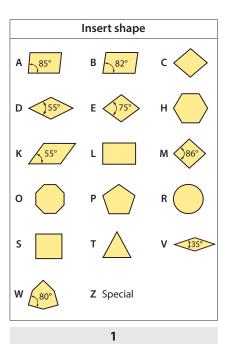
Technical info A501

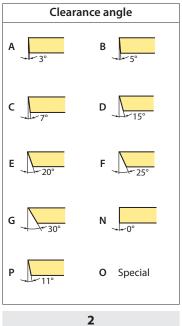
Cutting data A366

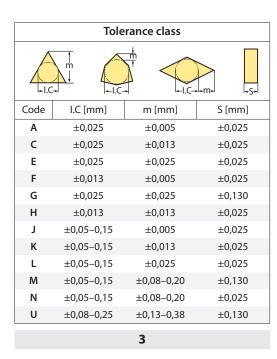


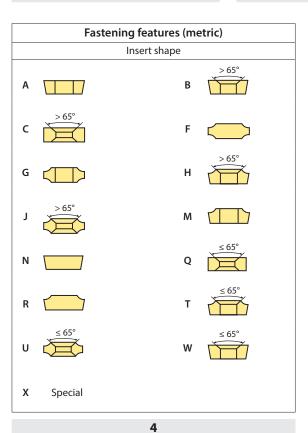
ISO standard

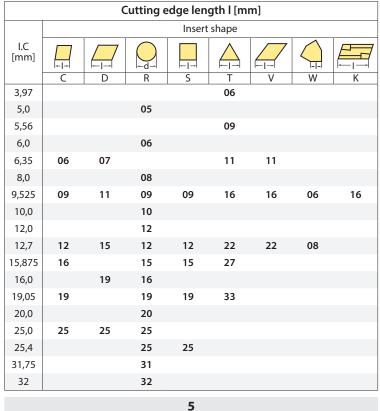
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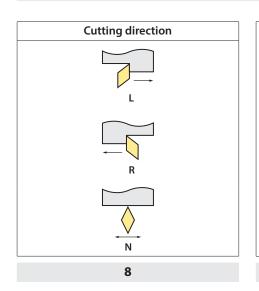


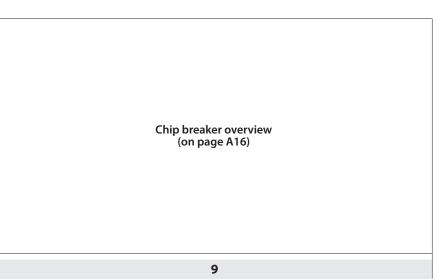
B

E

Insert thickness S [mm]								
	\$	\$ 1						
Code	S	Code	S					
00	0,79	T5	5,95					
T0	0,99	06	6,35					
01	1,59	Т6	6,75					
T1	1,98	07	7,94					
02	2,38	09	9,52					
T2	2,58	Т9	9,72					
03	3,18	11	11,11					
T3	3,97	12	12,70					
04	4,76							
T4	4,96							
05	5,56							

Code r 00 - 02 0,2 04 0,4 08 0,8 12 1,2 16 1,6 20 2,0 24 2,4 32 3,2 X Special	Nose radius r [mm]						
00		r'					
02 0,2 04 0,4 08 0,8 12 1,2 16 1,6 20 2,0 24 2,4 32 3,2 X Special	Code	r					
04 0,4 08 0,8 12 1,2 16 1,6 20 2,0 24 2,4 32 3,2 X Special	00	-					
08 0,8 12 1,2 16 1,6 20 2,0 24 2,4 32 3,2 X Special	02	0,2					
12 1,2 16 1,6 20 2,0 24 2,4 32 3,2 X Special	04	0,4					
16 1,6 20 2,0 24 2,4 32 3,2 X Special	08	0,8					
20 2,0 24 2,4 32 3,2 X Special	12	1,2					
24 2,4 32 3,2 X Special	16	1,6					
32 3,2 X Special	20	2,0					
X Special	24	2,4					
	32	3,2					
D 1: .	Х	Special					
MO Kound inserts	МО	Round inserts					





ANSI standard

M G 4 (N) –

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						

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		Insert thickness						
3 4.76 0.187 4 6.35 0.250 5 7.94 0.313	ce	[mm]	Code					
4 6.35 0.250 5 7.94 0.313	25	3.18	2					
5 7.94 0.313	37	4.76	3					
	50	6.35	4					
6 9.52 0.375	13	7.94	5					
	75	9.52	6					

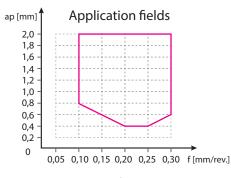
	Nose radiu	S
Code	[mm]	Pouce
0	0.2	0.008
1	0.4	0.016
2	0.8	0.031
3	1.2	0.047
4	1.6	0.063
5	2.0	0.079
6	2.4	0.094
	7	

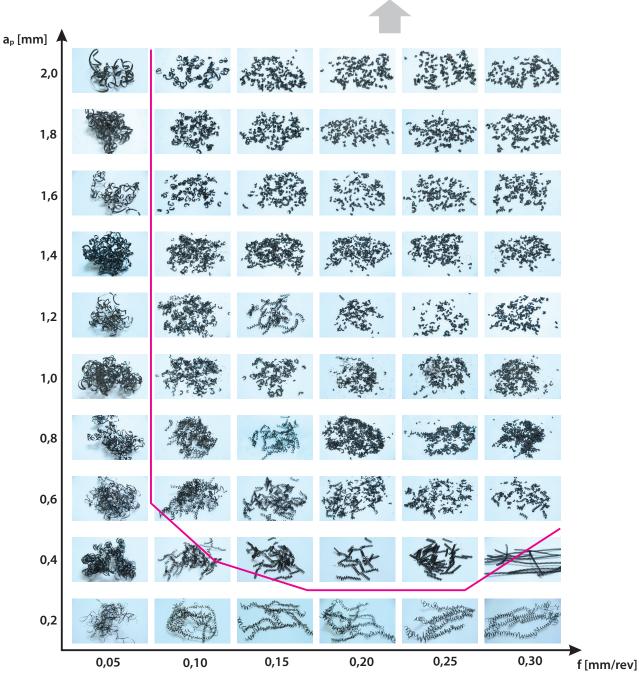
General turning

Application fields of chip breakers

Example

Insert: CNMG120408-DF Holder: PCLNL2525M12 Material: C45 steel V_C: 200 m/min







Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
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.
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.
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.
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.
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.
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.
YBM253	M15 - M35	1/1 en 12 1/1 e	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.



Coated cemented carbide CVD

ISO	Micro structure	Grade description
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.
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.
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.
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.
	K05 - K20 K10 - K25	K10 - K25

Coated cemented carbide PVD

ISO	Micro structure	Grade description
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.
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.
S05 - S20		PVD multilayer coated 505–520 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.
	N05 - N20	N05 - N20 S05 - S15



Coated cemented carbide PVD

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
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.
CN1000	K05 - K15		Uncoated K05-K15 Si3N4 ceramic grade for finishing to medium operation in grey cast iron. Good wear resistance and thermal stability.



Grade	ISO	Micro structure	Grade description
CS1000	S05 – S20		Uncoated SiAlON 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.
YD201	N10 - N30 K10 - K30		Uncoated N10–N30/K10–K30 carbide substrate for medium application in aluminum and other material.

CBN

Grade	ISO	Micro structure	Grade description
YCB112	S10 – S20		Uncoated, brazed S10–S20 CBN grade for fine finishing operations on hardened steel and super alloys. Excellent wear resistance and thermal stability.



CBN

B

Grade	ISO	Micro structure	Grade description
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.
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.
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.
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
YCB121C	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.
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.
YCB215	K10 - K20		Uncoated, brazed K10 –K20 CBN grade for fine to medium machining operations on cast iron. Excellent wear resistance and thermal conductivity.
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.



CBN

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

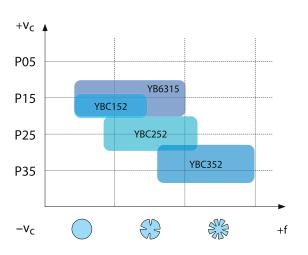
Grade	ISO	Micro structure	Grade description
YCD421	N01 - N10		Uncoated, brazed N01–N10 PCD grade for fine finishing operation of aluminum alloys less than 12 % Si, composites, copper/magnesium and other alloys. Medium grain size grade with good wear resistance for a wide application field.

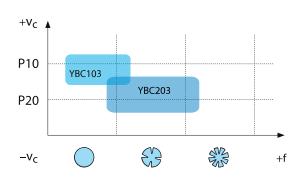
Cermet

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.
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.
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.

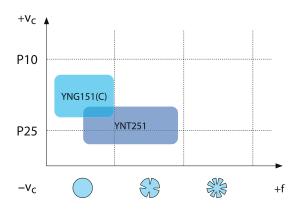


CVD coated carbide grades for steel

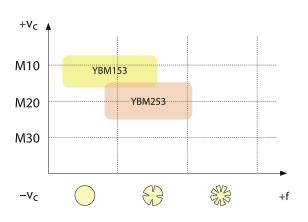


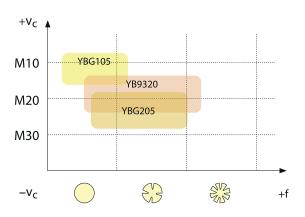


Cermet grades for steel

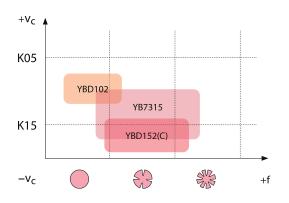


CVD coated carbide grades for stainless steel

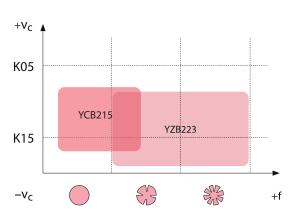




CVD coated carbide grades for cast iron

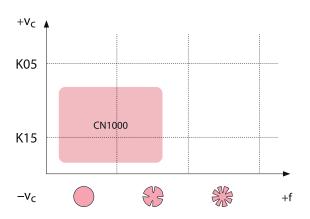


CBN grades for cast iron

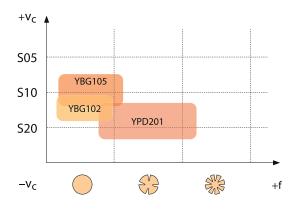


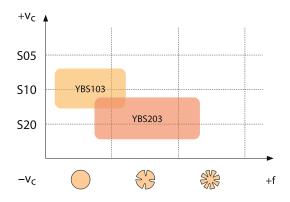


Ceramic grades for cast iron

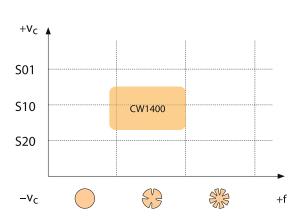


PVD coated carbide grades for superalloys

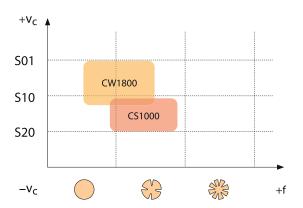




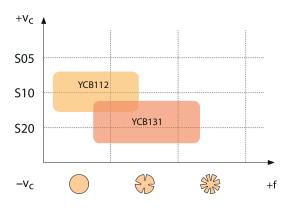
Ceramic grades for cobalt base alloys/HSS



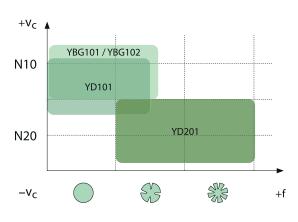
Ceramic grades for nickel base alloys



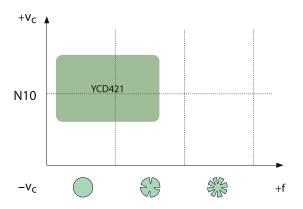
CBN grades for superalloys



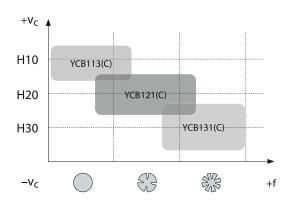
Carbide grades for non-ferrous metals



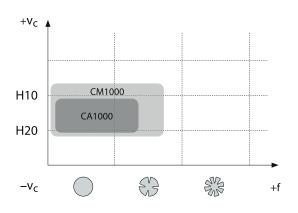
PCD grades for non-ferrous metals



CBN grades for hardened steel



Ceramic grades for hardened steel



	ISO	HC ¹ (CVD)	HC ¹ (PVD)	НТ	HC ²	Ceramic	HW	CBN	PCD
	P01								
	P10	YBC103		YNG151	YNG151C				
Р	P20	MRC1 MRC1 MRC2 MR		YNG YNT251	***				
	P30	YII YEC252 YEC252 YEC352							
	P40								
	M01								
	M10	153	YBG105 9320 8G205	YNG151	YNG151C				
M	M20	YBM153	YB9320 YB9320	>	<mark>\$</mark>				
	M30	*							
	M40								
	K01					000			
	K10	YBD102 YBD152 YBD152 BD152C				CN1000		YZB223	
K	K20	YBD102 YBD152 YBD152C					YD201	, ZE	
	K30								
	N01								
	N10		20				5		121
N	N20		YBG101				YD201		YCD421
	N30								
	S01								
	S10		YBG102 YBG102 YBG105			CS1000 100 300		YCB112 B131	
S	S20		YBG10 YBG320 YB9320 YPD201			CW1400		YCB131	
	S30		70						
	H01								
	H10							YCB113(C) CB121(C)	
Н	H20							YCB113(C)	
	H30							YCE YCE	

P	Steel
M	Stainless steel
K	Cast iron

N	Non-ferrous metals
S	Heat-resistant alloys
н	Hardened materials

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

