

A

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

ZNEX	I.C	S	d
04 01	4.76	1.59	2.3

Turning CBN inserts

ZN** negative insert				BL (CBN)			BC (CBN)			BH (CBN)		
	P											
	M											
	K									●		
	N											
	S	●	⊗									
	H	○	⊗	⊗			○	⊗	⊗			

B

Milling

ISO	r	a _p	f	BL (CBN)			BC (CBN)			BH (CBN)		
				YCB112	YCB113	YCB121	YCB131	YCB113C	YCB121C	YCB131C	YCB215	
	ZNEX040102S01515	0.2	0.08-0.50	0.05-0.15	○	○						
	ZNEX040104S01515	0.4	0.08-0.50	0.05-0.20	○	○						

● Ex stock ○ On demand

BL CBN with a low CBN content
 BC CBN with coating
 BH CBN with a high CBN content

C

Drilling

Tool holder
C*-SZLNR/L**
 Kr: 95°

A365

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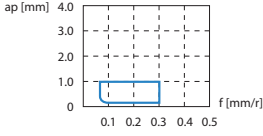
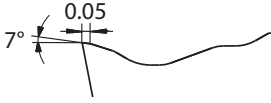


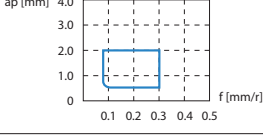
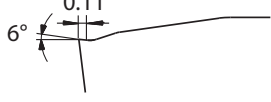


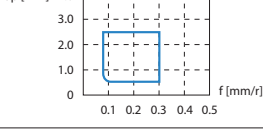
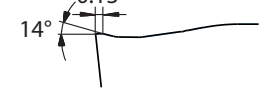


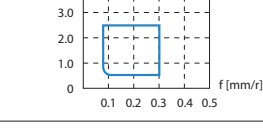
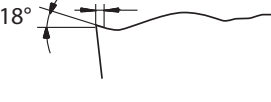


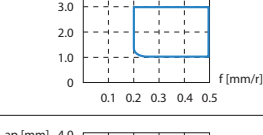
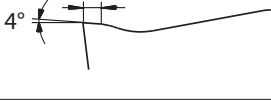


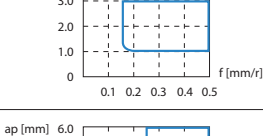
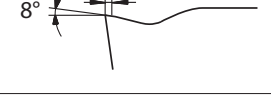



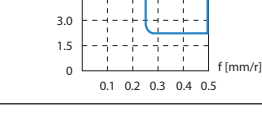

System code > A158

Grade selection > A42

Technical info > A501

Cutting data > A366

P Positive inserts

Chip breaker	Application		Application fields	Cutting edge design
SF	Fine-finishing			
HF	Finishing	 		
AHF	Finishing	 		
XF	Finishing	 		
HM	Medium machining	 		
XM	Medium machining	 		
HR	Roughing	  		

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P Negative inserts

Chip breaker	Application	Application fields	Cutting edge design
SF	Fine-finishing		
DF	Finishing		
XF	Finishing		
ADF	Finishing		
DM	Medium machining		
PM	Medium machining		
ZM	Medium machining		
XM	Medium machining		
WG	Medium machining		
Basic	Medium machining		
DR	Roughing		

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P Negative inserts

Chip breaker	Application		Application fields	Cutting edge design
DR (single sided)	Roughing			
LR (single sided)	Roughing			
HDR (single sided)	Roughing			
HPR (single sided)	Roughing			

B

Milling

C
P Negative inserts (rail technology)

Chip breaker	Application		Application fields	Cutting edge design
RF	Finishing			
RH	Roughing			

Drilling


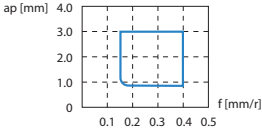


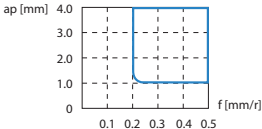
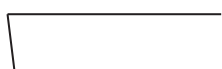
D

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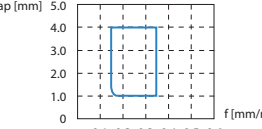
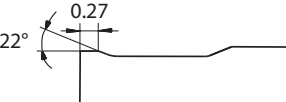

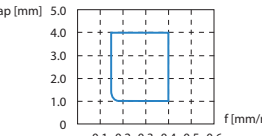
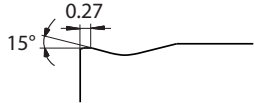

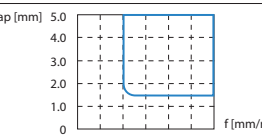
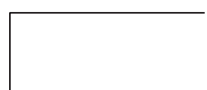
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K Positive inserts

Chip breaker	Application		Application fields	Cutting edge design
TC	Medium machining			
Flat	Roughing			

K Negative inserts

Chip breaker	Application		Application fields	Cutting edge design
TK	Medium machining			
TC	Medium machining			
Flat	Roughing			

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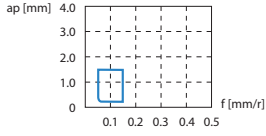



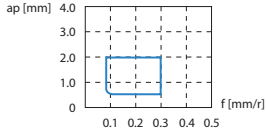
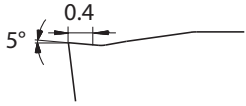



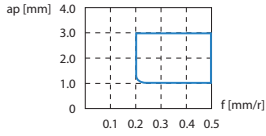
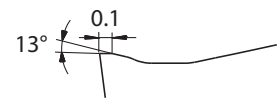
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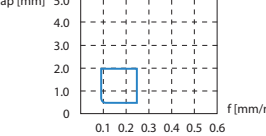
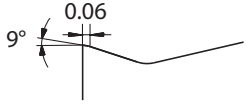


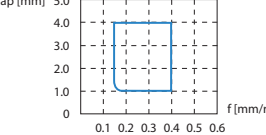
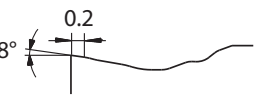


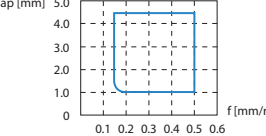
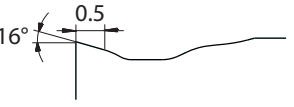



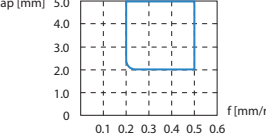
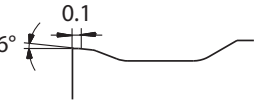



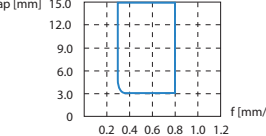
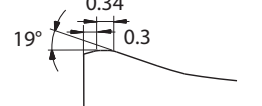
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M Positive inserts

Chip breaker	Application		Application fields	Cutting edge design
USF	Fine-finishing			
EF	Finishing	 		
EM	Medium machining	  		

M Negative inserts

Chip breaker	Application		Application fields	Cutting edge design
EF	Finishing			
EM	Medium machining	 		
EG	Medium machining	 		
ER	Roughing	  		
ER (single sided)	Roughing	  		

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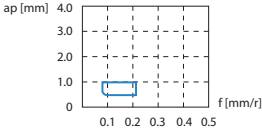


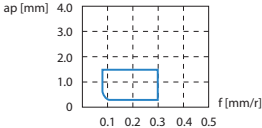


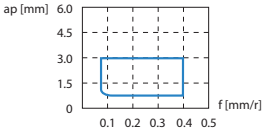

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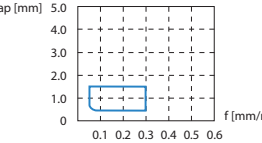
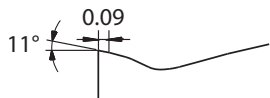

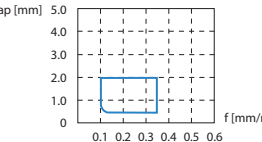


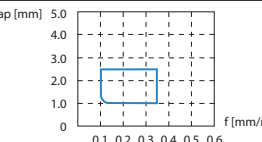
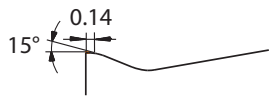

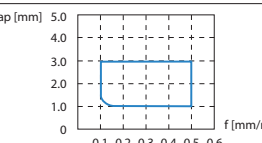
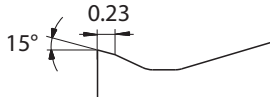
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S Positive inserts

Chip breaker	Application		Application fields	Cutting edge design
NF	Finishing			
NGF	Finishing			
SNR	Roughing			

S Negative inserts

Chip breaker	Application		Application fields	Cutting edge design
NF	Finishing			
NGF	Medium machining			
NM	Medium machining			
SNR	Roughing			

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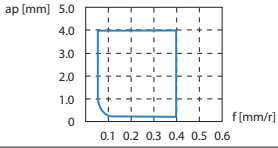
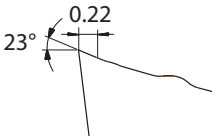

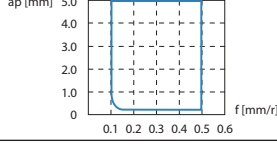
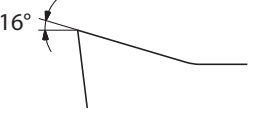
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N Positive inserts

Chip breaker	Application		Application fields	Cutting edge design
LC	Finishing			
LH	Finishing			

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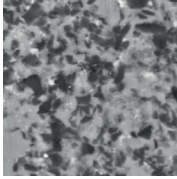
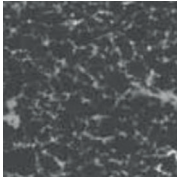
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CBN

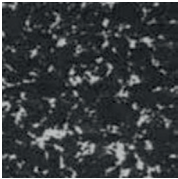
Grade	ISO	Micro structure	Grade description
YCB113	H01 - H10		Uncoated, brazed H01–H10 CBN grade for fine finishing operation in hardened steel with continuous cut. High wear resistance and productivity at higher cutting speed.
YCB121	H10 - H25		Uncoated, brazed H10–H25 CBN grade for fine to medium application 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

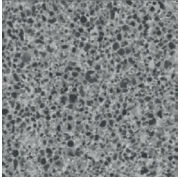
Grade	ISO	Micro structure	Grade description
YZB630C	H20 - H30		Coated H20–H30 solid CBN grade for medium machining operations on hardened steel with a slight to medium interrupted cut. Excellent combination of wear resistance and thermal stability.

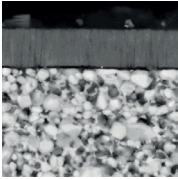
YZB223	K10 - K25		Uncoated H10–H25/K10–K25 mixed ceramic grade for finishing to medium operation in hardened steel and nodular cast iron. Good wear resistance and toughness.
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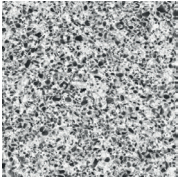
PCD

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.
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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.
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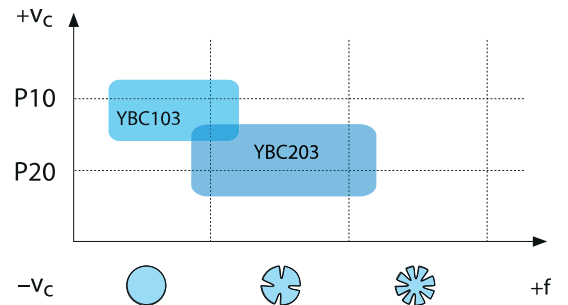
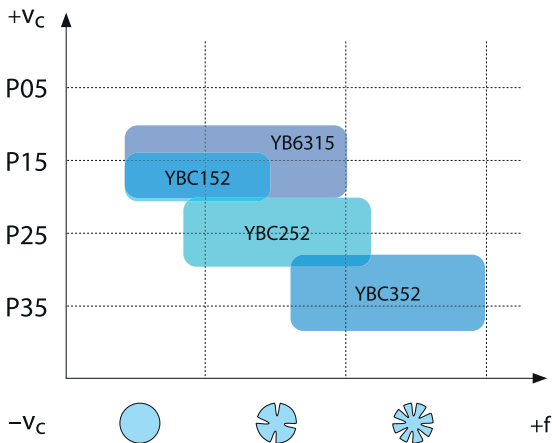
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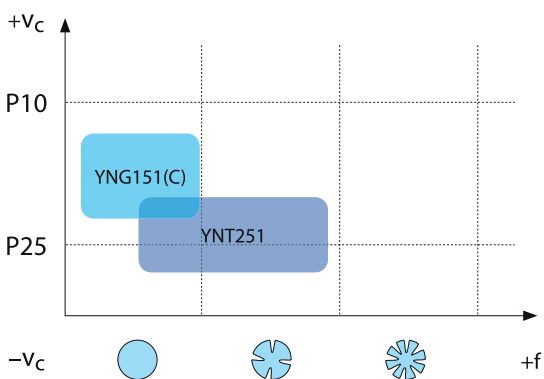
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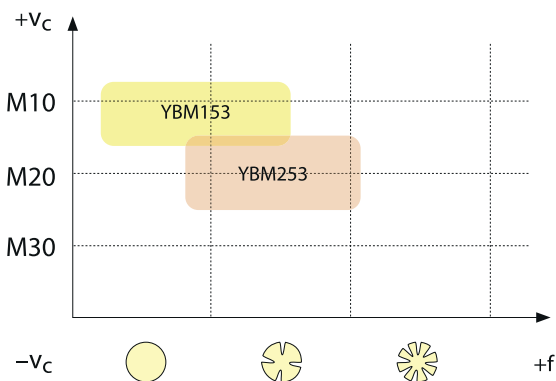
CVD coated carbide grades for steel



Cermet grades for steel



CVD coated carbide grades for stainless steel



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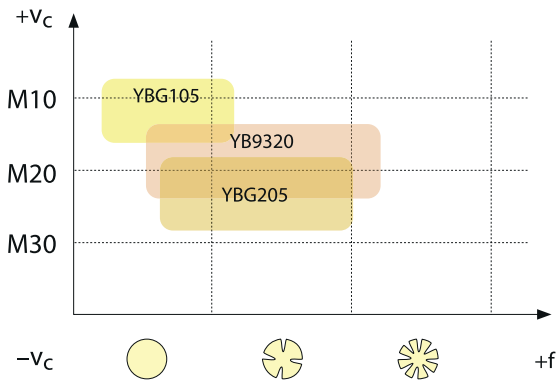
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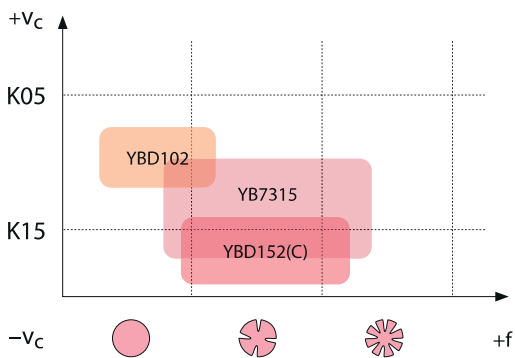
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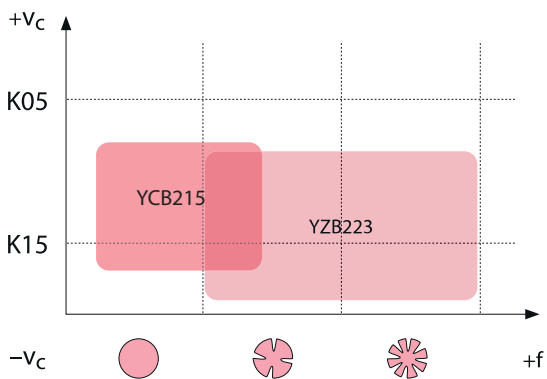
PVD coated carbide grades for stainless steel



CVD coated carbide grades for cast iron



CBN grades for cast iron



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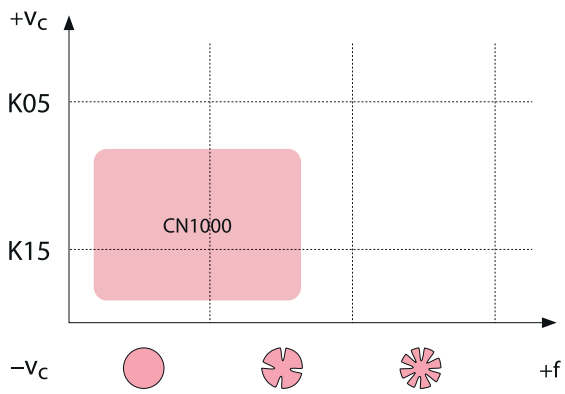
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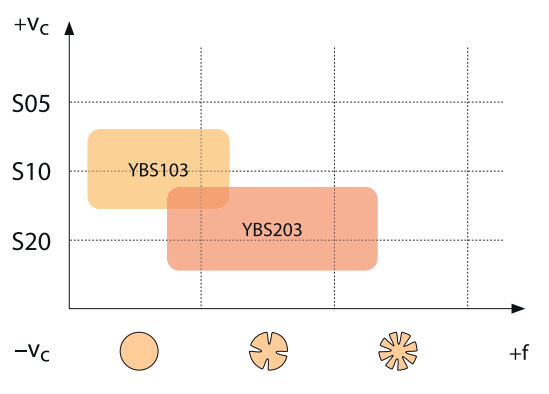
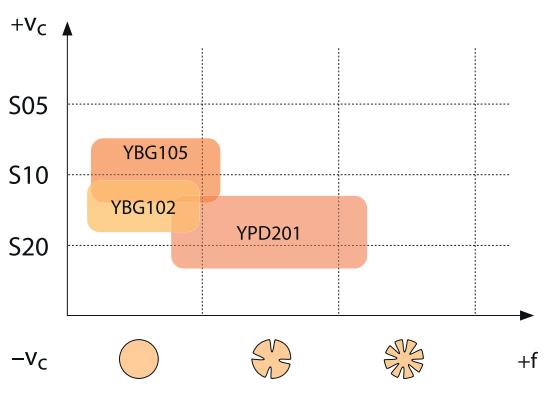
Ceramic grades for cast iron



B

Milling

PVD coated carbide grades for superalloys



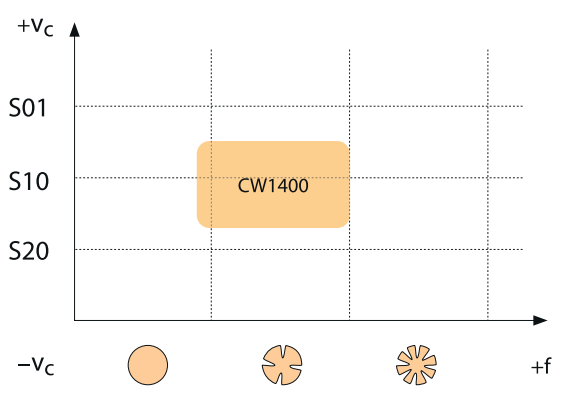
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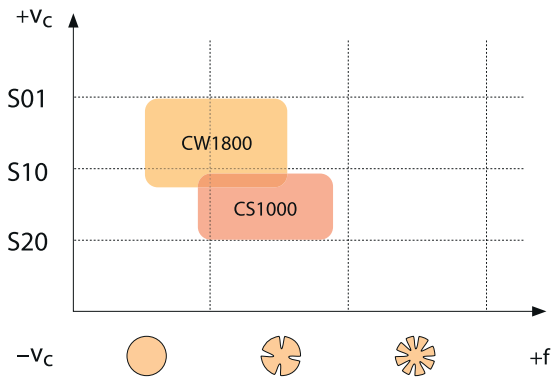
Ceramic grades for cobalt base alloys/HSS



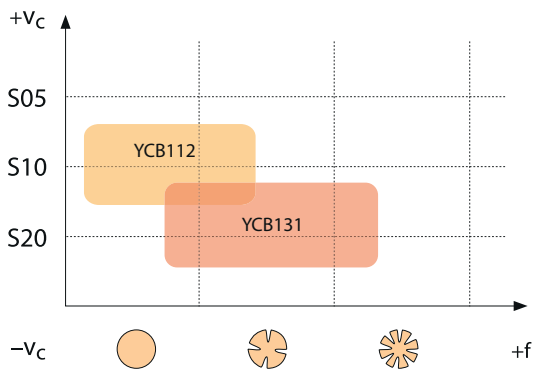
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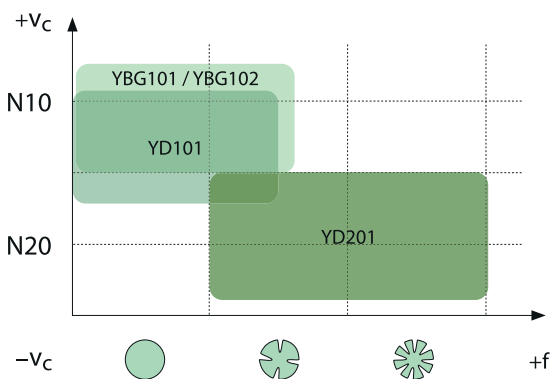
Ceramic grades for nickel base alloys



CBN grades for superalloys



Carbide grades for non-ferrous metals



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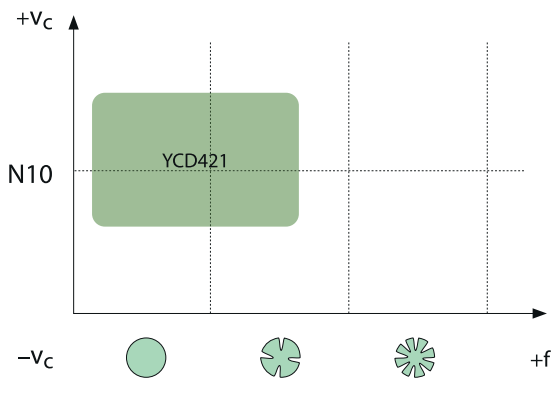
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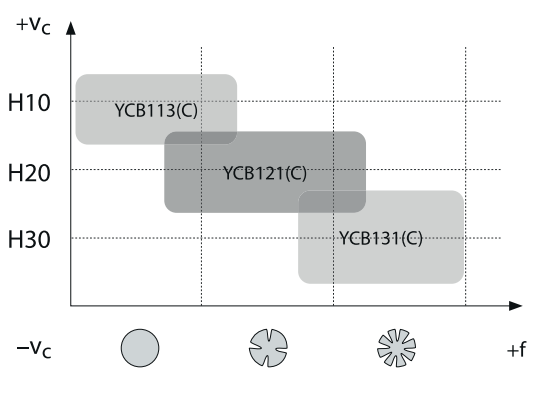
PCD grades for non-ferrous metals



B

Milling

CBN grades for hardened steel



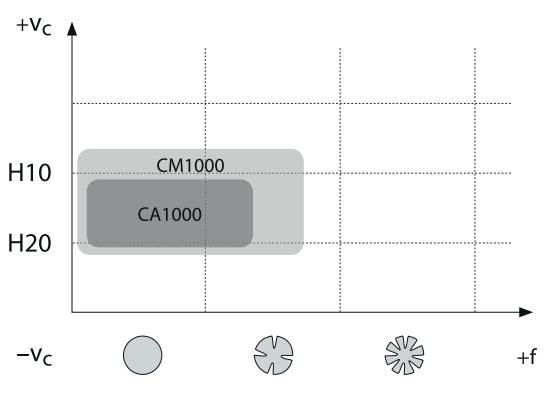
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Ceramic grades for hardened steel



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Application fields of grades – general turning

	ISO	HC ¹ (CVD)	HC ¹ (PVD)	HT	HC ²	Ceramic	HW	CBN	PCD
P	P01	YBC103		YNG151	YNG151C				
	P10	YB6315		YNT251					
	P20	YBC152							
	P30	YBC203							
	P40	YBC252							
		YBC352							
M	M01		YBG105	YNG151	YNG151C				
	M10	YBM153	YB9320						
	M20	YBM253	YBG205						
	M30								
	M40								
K	K01					CN1000		YCB215	YZB223
	K10	YBD102	YBD152				YD201		
	K20	YB7315	YBD152C						
	K30								
N	N01								
	N10		YBG101	YBG102			YD101		YCD421
	N20						YD201		
	N30								
S	S01		YBS103			CS1000		YCB112	
	S10		YBG102			CW1400		YCB131	
	S20		YBG105			CW1800			
	S30		YB9320	YPD201					
H	H01							YCB113(C)	
	H10							YCB121(C)	
	H20								YCB131(C)
	H30								

- P** Steel
- M** Stainless steel
- K** Cast iron

- N** Non-ferrous metals
- S** Heat-resistant alloys
- H** Hardened materials

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

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C N G A 12 04 08 T 020 20 – 2 (W)

1 2 3 4 5 6 7 8 9 10 11 12

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Insert shape		
A	B	C
D	E	H
K	L	M
P	S	T
V	W	Z Special

1

Clearance angle	
A	B
C	D
E	F
G	N
P	O Special

2

Tolerance class			
Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,15	±0,005	±0,025
K	±0,05–0,15	±0,013	±0,025
L	±0,05–0,15	±0,025	±0,025
M	±0,05–0,15	±0,08–0,20	±0,130
N	±0,05–0,15	±0,08–0,20	±0,025
U	±0,08–0,25	±0,13–0,38	±0,130


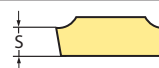
3

Fastening features (metric)	
Insert shape	
A	B
C	N
Q	W
X Special	

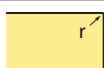
4

Cutting edge length l [mm]						
I.C [mm]	Insert shape					
3,97						06
5,0						
5,56						09
6,0						
6,35	06	07		11	11	
8,0						
9,525	09	11	09	16	16	06
10,0						
12,0						
12,7	12	15	12	22	22	08
15,875	16		15	27		
16,0		19				
19,05	19		19	33		
20,0						
25,0	25	25				
25,4			25			
31,75						
32						





5

Insert thickness S [mm]			
			
Code	S	Code	S
02	2,38	06	6,35
T2	2,58	T6	6,75
03	3,18	07	7,94
T3	3,97	09	9,52
04	4,76	T9	9,72
T4	4,96	11	11,11
05	5,56	12	12,70
T5	5,95		

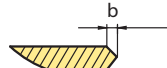
6

Nose radius r [mm]	
	
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
MO	Round inserts


7

Cutting edge profile		
Code	Cutting edge	Insert shape
E	Rounding	
F	Sharp edge	
T	Chamfer	
S	Chamfer + Rounding	





8

Chamfer width b [mm]	
	
Code	b
010	0,10
015	0,15
020	0,20
025	0,25
030	0,30
035	0,35
040	0,40
045	0,45
050	0,50
100	1,00
200	2,00

9

Chamfer angle α	
	
Code	α
05	5°
10	10°
15	15°
20	20°
25	25°
30	30°

10

Cutting edges	
Code	Form
1	
2	
3	
4	

11

Extra	
Code	Description
W	Wiper
HS	Full face single brazed CBN insert
M	Solid CBN with clamping dimple
CB	Chip breaker (CBN)
MED	Chip breaker, fine – medium (PCD)
ROF	Chip breaker, medium – roughing (PCD)
L (L/R)	Full-edge tipped (PCD)

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