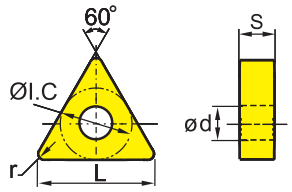
Turning inserts

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

TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16



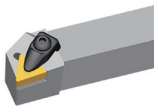
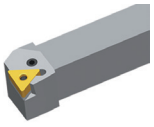
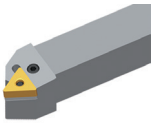
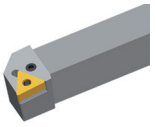
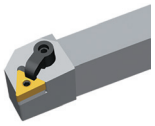
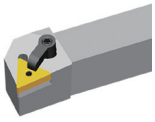
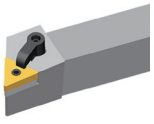
TN** negative insert					HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
P																										
M																										
K																										
N																										
S																										
H																										
	ISO		r	a_p	f	YBC103	YB6315	YBC152	YBC203	YBC252	YBC352	YBM153	YBM253	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YBG205	YB9320	YPD201	YBS103	YNG151	YNT251	YNG151C	YD101	YD201
FM	**TNMG160404L-FM**		0.4	0.5-3.0	0.1-0.3					●										●							
	TNMG160404R-FM		0.4	0.5-3.0	0.1-0.3			○		●										●							
	TNMG160408L-FM		0.8	0.5-3.0	0.15-0.50			○		●										●							
	TNMG160408R-FM		0.8	0.5-3.0	0.15-0.50			●		●										●							
Finishing																											
XM	**TNMG160404-XM**		0.4	1-5.6	0.2-0.4	●			○																		
	TNMG160408-XM		0.8	1-5.6	0.2-0.4	●			●																		
	TNMG160412-XM		1.2	1-5.6	0.2-0.6	●			●																		
	TNMG160416-XM		1.6	1-5.6	0.2-0.65	○			●																		
	TNMG220408-XM		0.8	1-7.7	0.2-0.4	●			●																		
	TNMG220412-XM		1.2	1-7.7	0.2-0.6	●			●																		
Medium Cut	**TNMG220416-XM**		1.6	1-7.7	0.2-0.65	○			●																		

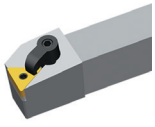
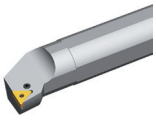
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

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

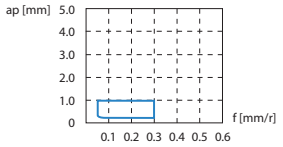
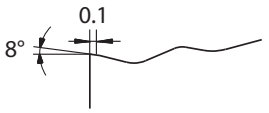
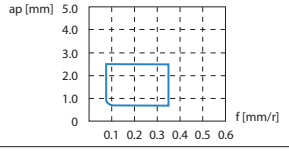
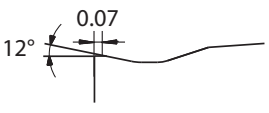
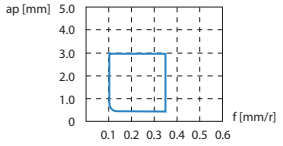
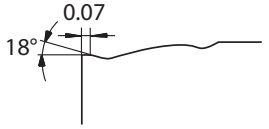
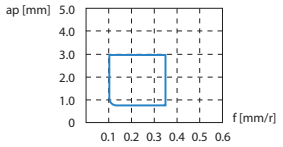
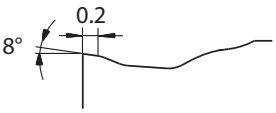
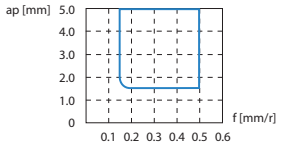
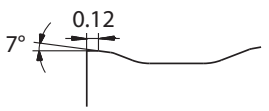
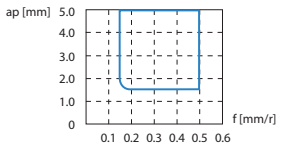
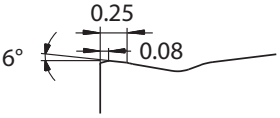
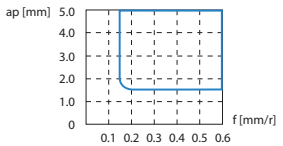
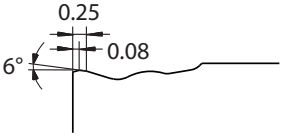
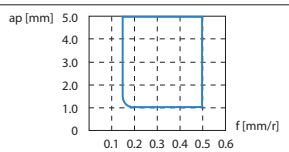
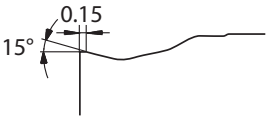
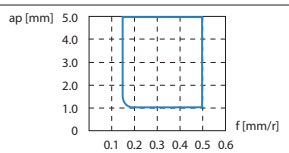
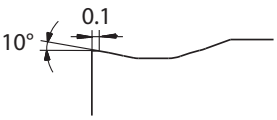
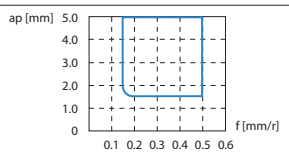
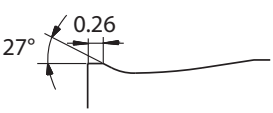
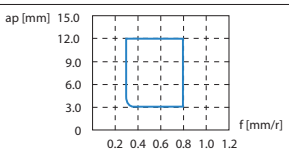
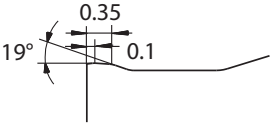
Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A233	A247	A248	A249	A260	A261	A262

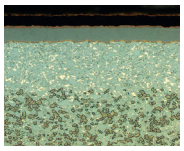
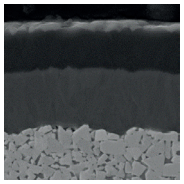
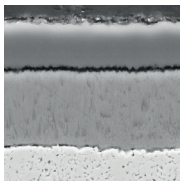
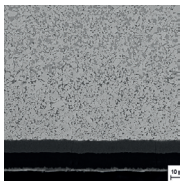
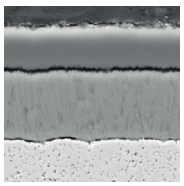
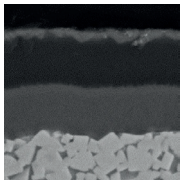
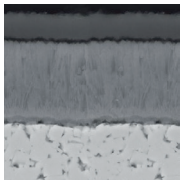
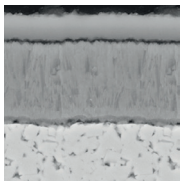
MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A263	A330

System code A48 Grade selection A42 Technical info A501 Cutting data A366

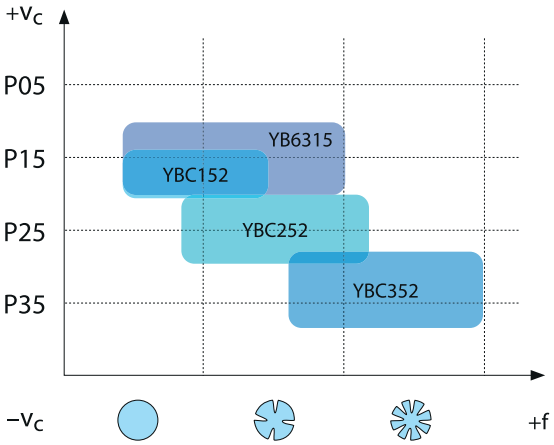
P Negative inserts

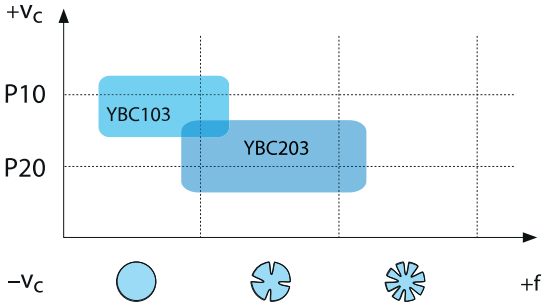
Chip breaker	Application		Application fields	Cutting edge design
SF	Fine-finishing			
DF	Finishing			
XF	Finishing			
ADF	Finishing			
DM	Medium machining			
PM	Medium machining			
ZM	Medium machining			
XM	Medium machining			
WG	Medium machining			
Basic	Medium machining			
DR	Roughing			

Coated cemented carbide CVD

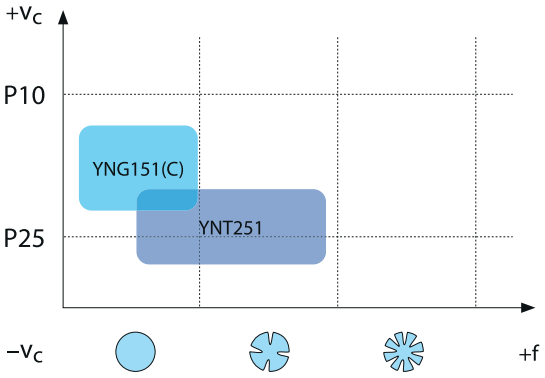
Grade	ISO	Micro structure	Grade description
YBC103	P05 – P15		P10 grade with excellent wear resistance at higher cutting speeds. Latest sinter processes and CVD coating technologies enable a wide range of applications in the P material range.
YB6315	P05 – P20		CVD coated P10–P20 carbide grade for finishing 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		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.

CVD coated carbide grades for steel

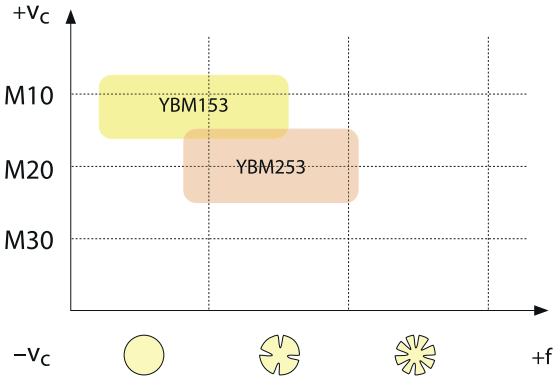




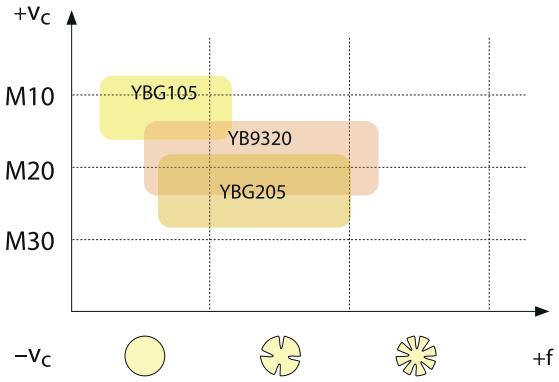
Cermet grades for steel



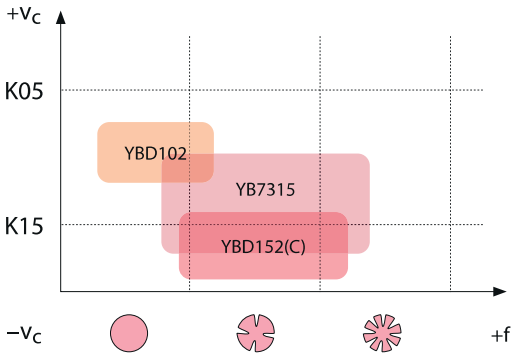
CVD coated carbide grades for stainless steel



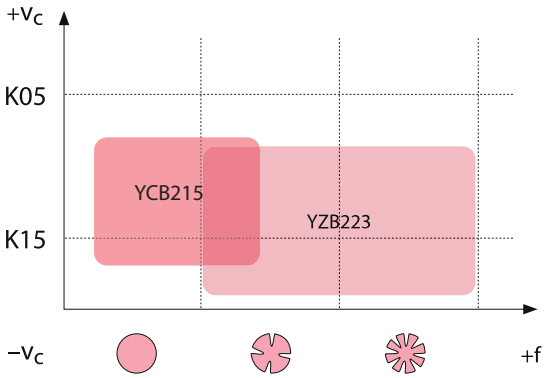
PVD coated carbide grades for stainless steel



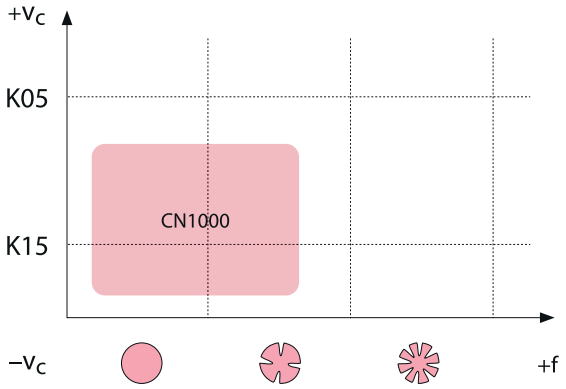
CVD coated carbide grades for cast iron



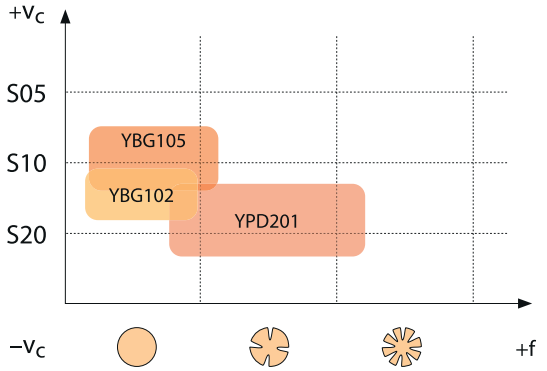
CBN grades for cast iron

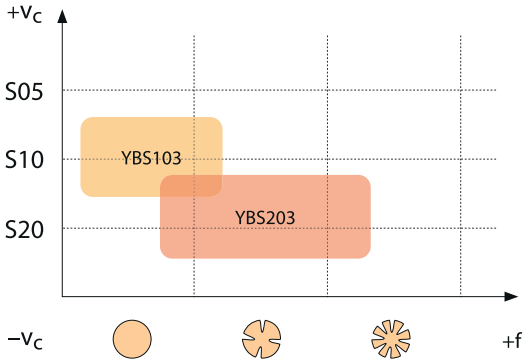


Ceramic grades for cast iron

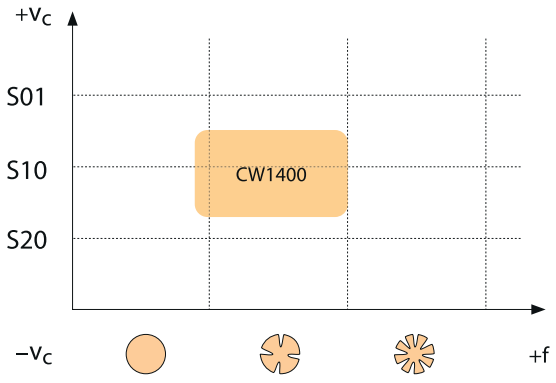


PVD coated carbide grades for superalloys

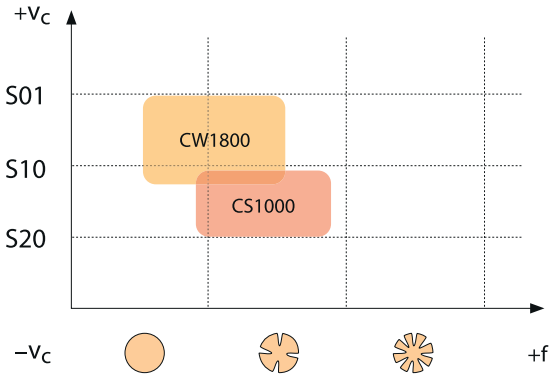




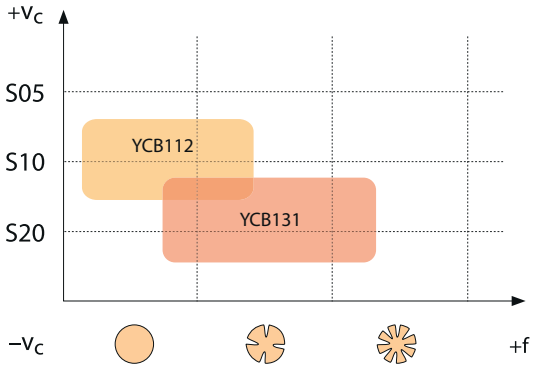
Ceramic grades for cobalt base alloys/HSS



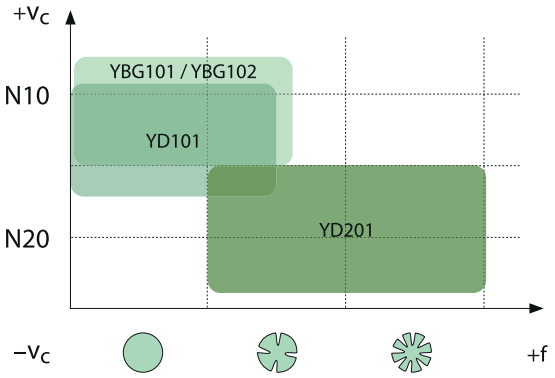
Ceramic grades for nickel base alloys



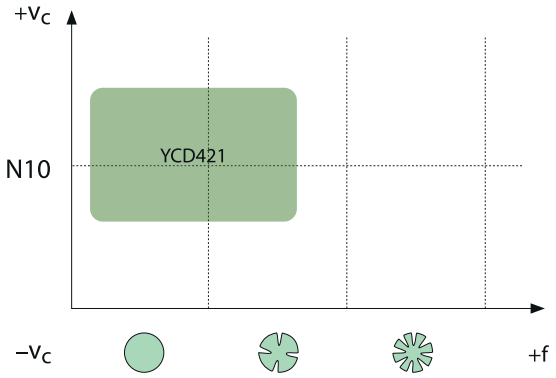
CBN grades for superalloys



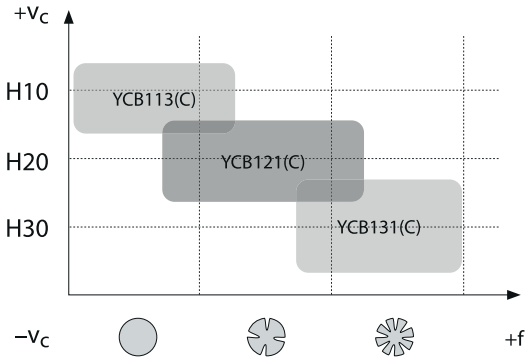
Carbide grades for non-ferrous metals



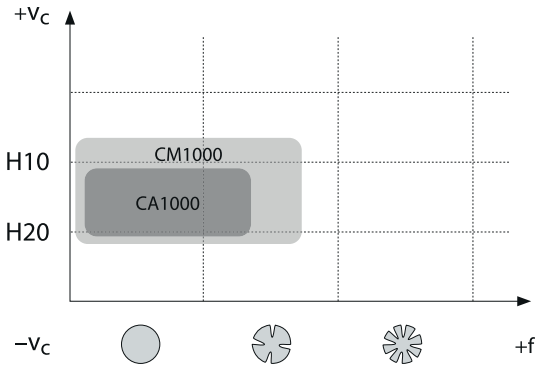
PCD grades for non-ferrous metals



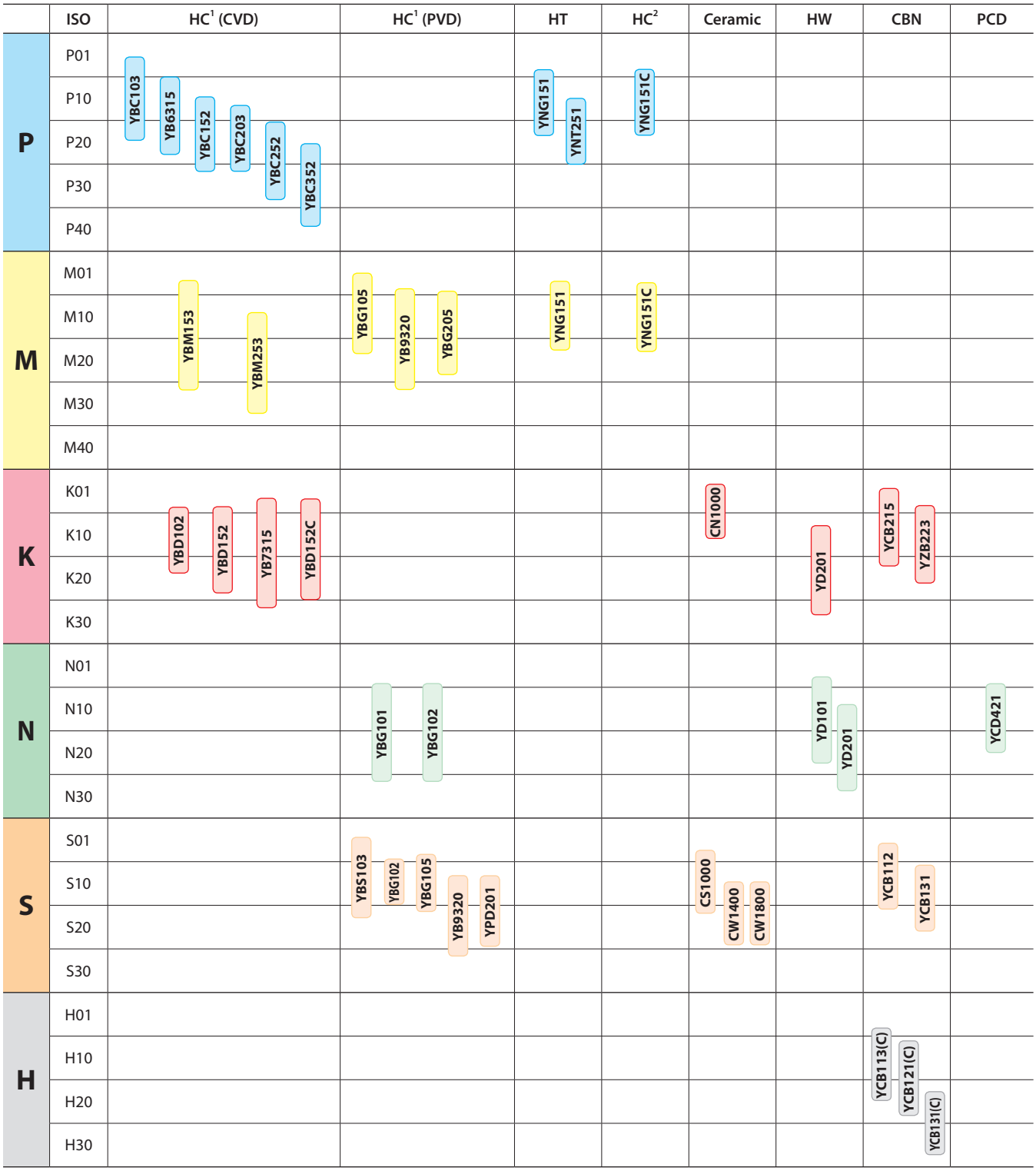
CBN grades for hardened steel



Ceramic grades for hardened steel



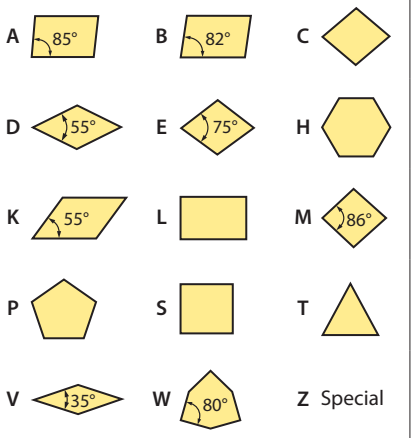
Application fields of grades – general turning



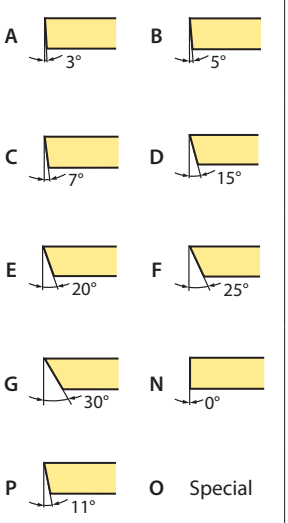
P	Steel	N	Non-ferrous metals	HC¹ Coated carbide
M	Stainless steel	S	Heat-resistant alloys	HT Uncoated cermet
K	Cast iron	H	Hardened materials	HC² Coated cermet
				HW Uncoated carbide

C	N	G	A	12	04	08	T	020	20	–	2	(W)
1	2	3	4	5	6	7	8	9	10		11	12

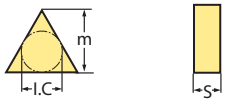
1 Insert shape



2 Clearance angle



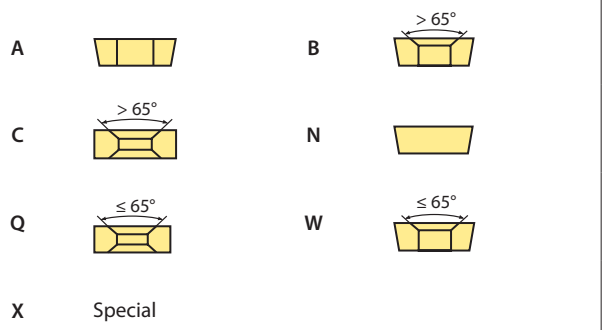
3 Tolerance class



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

4 Fastening features (metric)

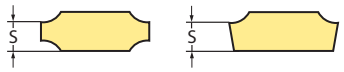
Insert shape



5 Cutting edge length l [mm]

I.C [mm]	Insert shape C	D	S	T	V	W
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						

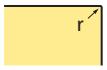
Insert thickness S [mm]



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

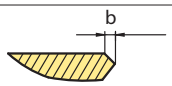
7

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

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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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