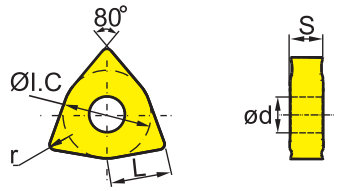
Turning inserts

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

WN**	L	I.C	S	d
06 T3	6.5	9.525	3.97	3.81
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

WN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◍	◍	◍	◍										◍	◍	◍	○	◍	○		
M							○	◍						○	○	◍	◍	◍	○	◍	○		
K									○	○	◍	◍	◍										
N													○	○								○	◍
S														○	○	◍	◍	◍				○	◍
H																							

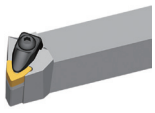
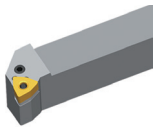
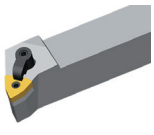
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
WG	**WNMG080408-WG**	0.8	0.5-5.0	0.15-0.70		●	●																					
	**WNMG080412-WG**	1.2	0.8-6.0	0.20-0.75		●	○																					
Wiper																												
EF	**WNMG060404-EF**	0.4	0.1-1.5	0.05-0.30							○											●	○					
	**WNMG060408-EF**	0.8	0.1-1.5	0.1-0.4							○											●	○					
	WNMG06T308-EF	0.8	0.1-1.5	0.1-0.4																		●						
Finishing	**WNMG080404-EF**	0.4	0.1-1.5	0.05-0.30				○			●											●	●					
	WNMG080408-EF	0.8	0.1-1.5	0.1-0.4				○			●								○			●	○					
NF	**WNEG080404-NF**	0.4	0.2-3.0	0.05-0.30															○	●								
	**WNEG080408-NF**	0.8	0.2-2.5	0.05-0.30																○								
Finishing																												
NF	**WNMG060408-NF**	0.8	0.2-2.5	0.05-0.30															○	●								
																												
Finishing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

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

Tool holder

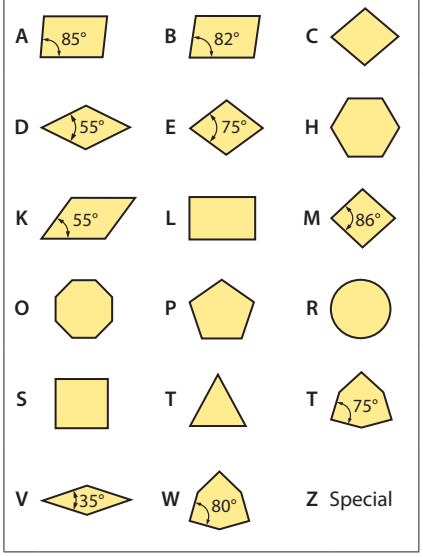
DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

ISO standard

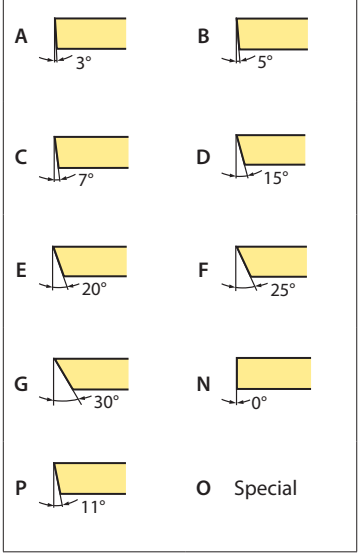
T	N	M	G	22	04	08	(N)	–	DM
1	2	3	4	5	6	7	8		9

Insert shape



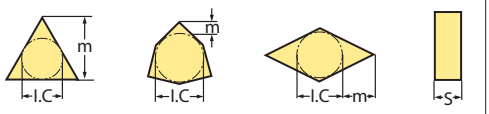
1

Clearance angle



2

Tolerance class

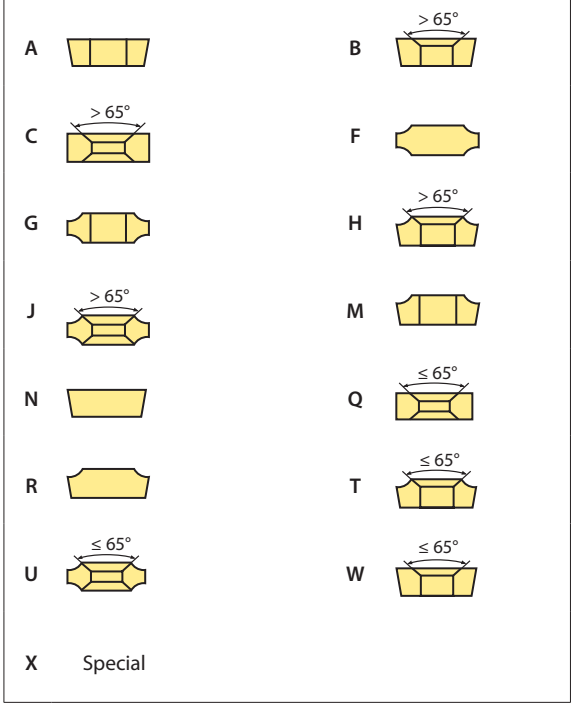


Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,15	±0,005	±0,025
K	±0,05–0,15	±0,013	±0,025
L	±0,05–0,15	±0,025	±0,025
M	±0,05–0,15	±0,08–0,20	±0,130
N	±0,05–0,15	±0,08–0,20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

3

Fastening features (metric)

Insert shape

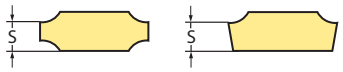


4

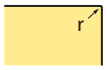
Cutting edge length l [mm]

I.C [mm]	Insert shape C	D	R	S	T	V	W	K
3,97					06			
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

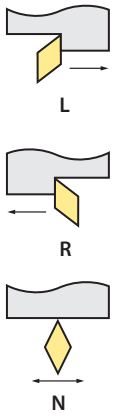
Insert thickness S [mm]			
			
Code	S	Code	S
00	0,79	**T5**	5,95
T0	0,99	**06**	6,35
01	1,59	**T6**	6,75
T1	1,98	**07**	7,94
02	2,38	**09**	9,52
T2	2,58	**T9**	9,72
03	3,18	**11**	11,11
T3	3,97	**12**	12,70
04	4,76		
T4	4,96		
05	5,56		

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 direction



8

Chip breaker overview
(on page A16)

9

ANSI standard

T	N	M	G	4	3	2	(N)	–	DM
1	2	3	4	**5**	**6**	**7**	8		9

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	[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

Negative inserts

Finishing

SF P M K

Double sided chip breaker in combination with cermet grades. Geometry with high sharpness for improved chip control and great surface quality. Ideal for machining with small cutting depths and feed rates.

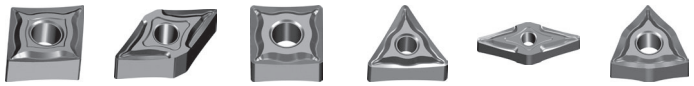
DF P K

Double sided chip breaker with good chip control. Suitable for finishing and medium machining of steel and cast iron.

ADF P M

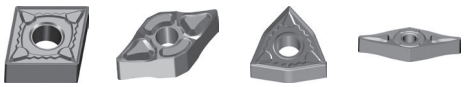
Ground, double sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.

EF M S



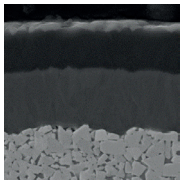
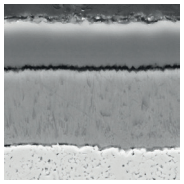
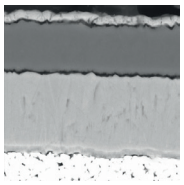
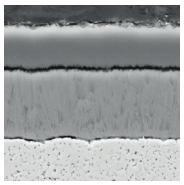
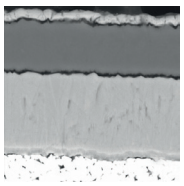
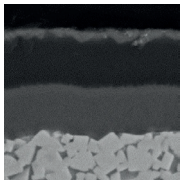
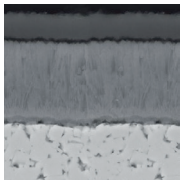
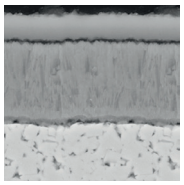
Double sided chip breaker with sharp cutting edge and large rake angle for finishing of stainless steel.

NF S M

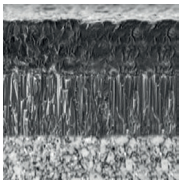
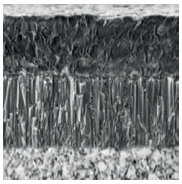
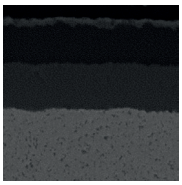
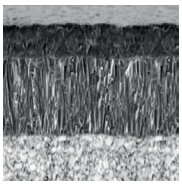
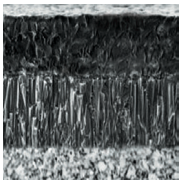


Double sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.

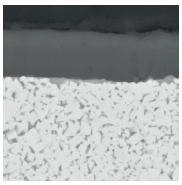
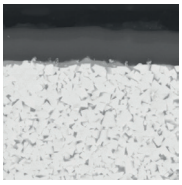
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YB6315	P10 – 20		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 – 20		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.
YBC251	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel in lower cutting speed.
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.
YBC351	P20 - P40		CVD coated P20–P40 carbide grade for roughing operation of steel and casting steel in lower cutting speed.
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.

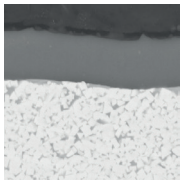
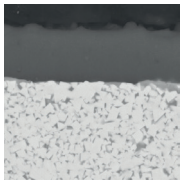
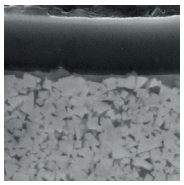
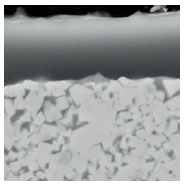
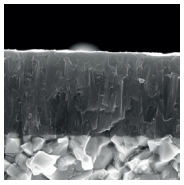
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YBD052	K05 - K15		CVD coated K05–K15 carbide grade for cast iron material, special grey cast iron. Excellent wear resistance in higher cutting speed and dry machining.
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.
YB7315	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.
YBD152	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.

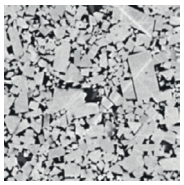
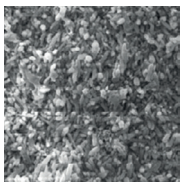
Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
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.

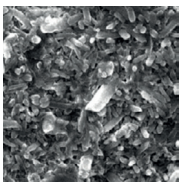
Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG202	P10 - P30 M10 - M25		PVD coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated M20–M40/S15–S25/P10–P30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.
YB9320	P10 - P30 M10 - M25		PVD multilayer coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (grooving/milling). Optimized coating stability for higher wear resistance and thermal stability in a wide application fi
YBG302	P15 - P30 M25 - M40		PVD coated M25–M40/P15–P30 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.
YBG101	N05 - N20		PVD coated N05–N20 carbide substrate for finishing to medium application in aluminum material. Coating only on the top face, in combination with the aluminum chip breaker, prevents build up edges and gives a smooth cut.

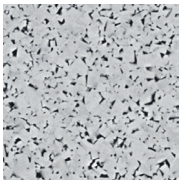
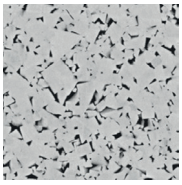
Ceramic

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

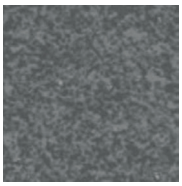
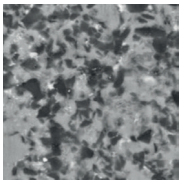
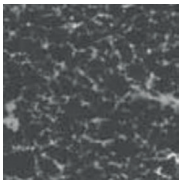
Ceramic

Grade	ISO	Micro structure	Grade description
CN2000	K10 - K30		Uncoated K10–K30 Si3N4 Ceramic grade for medium operation in grey cast iron also with interrupted cut. Good wear resistance, toughness and thermal stability.

Uncoated cemented carbide

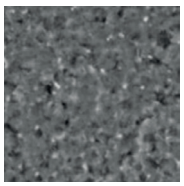
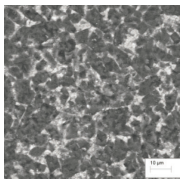
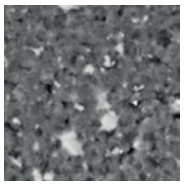
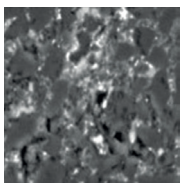
Grade	ISO	Micro structure	Grade description
YD101	N05 - N20 K05 - K20		Uncoated N05–N20/K05–K20 carbide substrate for fine to medium application in aluminum and other material.
YD201	N10 - N30 K10 - K30		Uncoated N10–N30/K10–K30 carbide substrate for medium application in aluminum and other material.

CBN

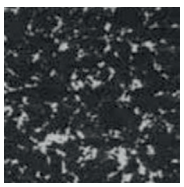
Grade	ISO	Micro structure	Grade description
YCB111	H01 - H10		Uncoated, brazed H01–H10 CBN grade for fine finishing operation in hardened steel with continuous cut. High wear resistance and productivity at higher cutting speed.
YCB121	H10 - H25		Uncoated, brazed H10–H25 CBN grade for fine to medium application 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.

General turning Grade overview

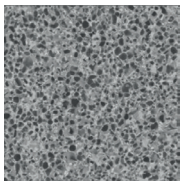
CBN

Grade	ISO	Micro structure	Grade description
YCB211	K10 - K25		Uncoated, brazed K10–K25 CBN grade for fine to medium machining of cast iron. Good wear resistance and thermal conductivity.
YZB121	H10 - H25		Uncoated H10–H25 solid CBN grade for medium application in hardened steel, HSS or bearing steel also in light interrupted cut. Good wear resistance and toughness.
YZB221	K10 - K25		Uncoated K10–K25 solid CBN grade for medium application in grey cast iron, nodular cast iron and Ni/Cr basic alloy., also in light interrupted cut. Good wear resistance and thermal conductivity.
YZB231	K20 - K30		Uncoated K20–K30 solid CBN grade for medium to roughing application in grey cast iron and nodular cast iron in interrupted cut. Good wear resistance, toughness and thermal conductivity.

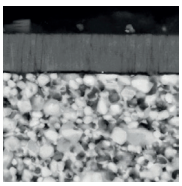
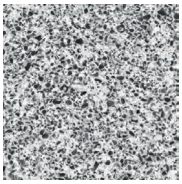
PCD

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.

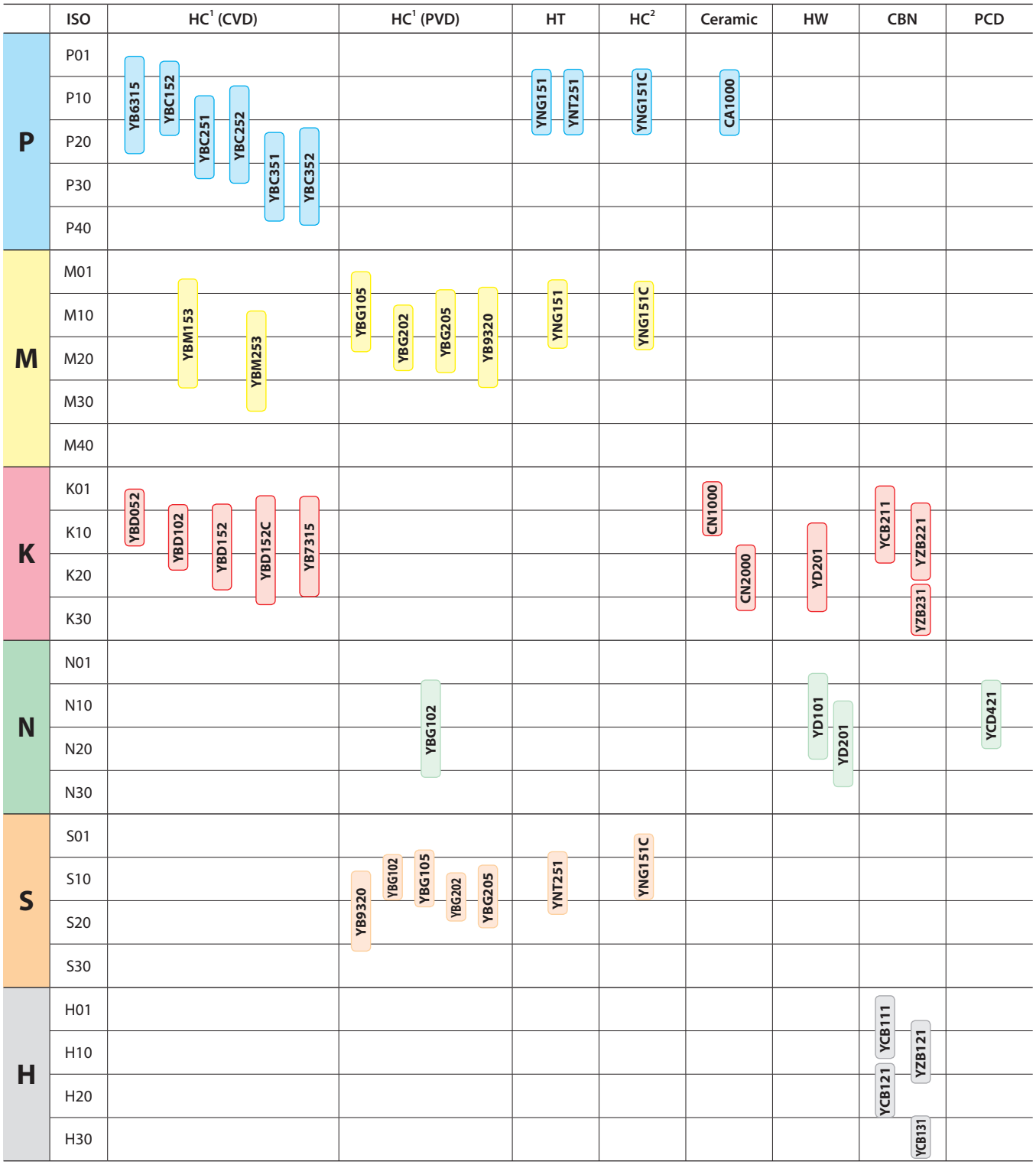
Cermet

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.

Cermet

Grade	ISO	Micro structure	Grade description
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.

Application fields of grades – general turning



P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

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