

WCMX	L	I.C	S	d
03 02	3.8	5.56	2.38	2.8
04 02	4.3	6.35	2.38	3.1
05 03	5.4	7.94	3.18	3.2
06 T3	6.5	9.525	3.97	3.7
08 04	8.7	12.7	4.76	4.3

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

Drilling inserts

WC** drilling insert			HC ¹ (CVD)		HC ¹ (PVD)					HW	
	P		⊗	⊗	⊗	⊗	⊗	⊗			
	M		⊗		⊗	⊗	⊗	⊗	⊗		
	K		⊗								
	N									⊗	
	S					⊗	⊗	⊗	⊗		
	H										
ISO		r	YB6338 YBD252		YBG105 YBG202 YBS203 YBG205 YB9320 YBG212					YD201	
	WCMX030208R-53	0.8	●		○						
	WCMX040208R-53	0.8	●		○						
	WCMX050308R-53	0.8	●		○						
	WCMX06T308R-53	0.8	●		○					○	
	WCMX080412R-53	1.2	●		○						
	WCMX06T308-D	0.8	○								
	WCMX080412-D	1.2	●								
	WCMX030208R-PG	0.8			○						
	WCMX040208R-PG	0.8			○						
	WCMX050308R-PG	0.8	○		○	○					
	WCMX06T308R-PG	0.8			○						
	WCMX080412R-PG	1.2			○						

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide



A Turning

B Milling

C Drilling

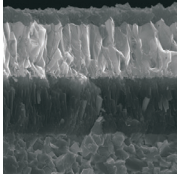

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A

Turning

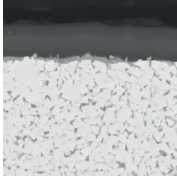
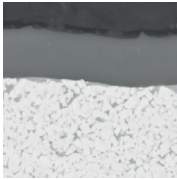
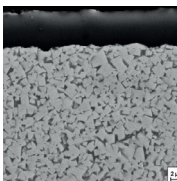
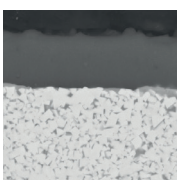
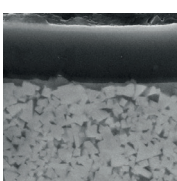
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YB6338	P20 - P40 K20 - K40		CVD coated P20–P40/K20–K40 carbide substrate for operation with higher cutting speed and feed rate in steel and cast iron.
YBD252	K20 - K35		CVD coated K20–K35 carbide substrate. Optimized for medium to roughing operation of cast iron and Steel. Good wear resistance and toughness at higher cutting speed.

B

Milling

Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
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.
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.
YBS203	S15 - S25		For processing heat-resistant materials. A special carbon substrate and the latest PVD coating technology enable a very good wear behaviour, high fracture toughness and high thermal stability.
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 applic

C

Drilling

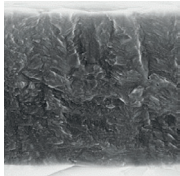
D

Technical Information

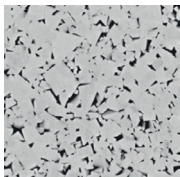
E

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Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG212	P25 - P35 M25-M40		PVD coated M25–M40/P25–P35 carbide substrate for steel and stainless steel. Especially for inner insert at drilling operation.

Uncoated cemented carbide

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

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Turning

B

Milling

C

Drilling

DTechnical
Information**E**

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Application fields of grades – indexable drills

	ISO	HC ¹ (CVD)	HC ¹ (PVD)	HT	HW	PCBN & PCD
A Turning	P01					
	P10					
	P20	YBD252	YBG202			
	P30	YB6338	YBG205			
	P40		YBG212			
B Milling	M01					
	M10		YBG202			
	M20		YB9320			
	M30		YBG205			
	M40		YBS203			
C Drilling	K01					
	K10	YBD252	YBG202			
	K20	YB6338	YBG205			
	K30					
	K40					YBG212
D Technical Information	N01					
	N10					
	N20				YD201	
	N30					
E Index	S01		YBG202			
	S10		YB9320			
	S20		YBG205			
	S30		YBS203			YBG212
F Index	H01					
	H10					
	H20					
	H30					

P	Steel
M	Stainless steel
K	Cast iron

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

HC¹ Coated cemented carbide
 HT Uncoated cermet
 HW Uncoated cemented carbide

Indexable drills

	Material group	Composition / structure / heat treatment		HB	Machining group	ZSD*		ZSD*			
						SPMX04		SPMX05/06			
						v _c [m/min]	f [mm]	v _c [m/min]	f [mm]		
A Turning	P Unalloyed steel	approx. 0,15 % C	annealed	125	1	200-300	0,05-0,08	200-300	0,05-0,10		
		approx. 0,45 % C	annealed	190	2	200-300	0,05-0,08	200-300	0,05-0,10		
		approx. 0,45 % C	tempered	250	3	200-300	0,05-0,08	200-300	0,05-0,10		
		approx. 0,75 % C	annealed	270	4	200-300	0,05-0,08	200-300	0,05-0,10		
		approx. 0,75 % C	tempered	300	5	200-300	0,05-0,08	200-300	0,05-0,10		
	P Low-alloyed steel			annealed	180	6	140-220	0,05-0,08	140-220	0,05-0,10	
				tempered	275	7	140-220	0,05-0,08	140-220	0,05-0,10	
				tempered	300	8	140-220	0,05-0,08	140-220	0,05-0,10	
				tempered	350	9	140-220	0,05-0,08	140-220	0,05-0,10	
		High-alloyed steel and high-alloyed tool steel			annealed	200	10	120-180	0,05-0,08	120-180	0,05-0,10
			hardened and tempered	325	11	120-180	0,05-0,08	120-180	0,05-0,10		
B Milling	M Stainless steel	ferritic/martensitic	annealed	200	12	110-230	0,05-0,08	110-230	0,05-0,10		
		martensitic	tempered	240	13	110-230	0,05-0,08	110-230	0,05-0,10		
		austenitic	quench hardened	180	14	110-230	0,05-0,08	110-230	0,05-0,10		
		austenitic-ferritic		230	15	110-230	0,05-0,08	110-230	0,05-0,10		
		Grey cast iron	perlitic/ferritic		180	16	170-240	0,05-0,08	170-240	0,05-0,10	
C Drilling	K Cast iron with spheroidal graphite	perlitic (martensitic)		260	17	170-240	0,05-0,08	170-240	0,05-0,10		
		ferritic		160	18	130-200	0,05-0,08	130-200	0,05-0,10		
	Malleable cast iron	perlitic		250	19	130-200	0,05-0,08	130-200	0,05-0,10		
		ferritic		130	20	120-220	0,05-0,08	120-220	0,05-0,10		
		perlitic		230	21	120-220	0,05-0,08	120-220	0,05-0,10		
D Technical Information	N Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	N Cast aluminium alloys	≤ 12 % Si, cannot be hardened			75	24					
		≤ 12 % Si, hardenable	hardened		90	25					
		> 12 % Si, cannot be hardened			130	26					
	N Copper and copper alloys (bronze/brass)	machining steel, PB > 1%			110	27					
		CuZn, CuSnZn			90	28					
CuSn, Pb-free copper, electrolytic copper			100	29							
E Index	S Heat-resistant alloys	Fe-based alloys	annealed		200	30					
			hardened		280	31					
		Ni or Co bass	annealed		250	32					
			hardened		350	33					
			cast		320	34					
Titanium alloys	pure titanium			R _m 400	35						
	α and β alloys	hardened		R _m 1050	36						
H Hardened steel	Hardened steel	hardened and tempered			55 HRC	37					
		hardened and tempered			60 HRC	38					
	Hard cast iron	cast			400	39					
	Hardened cast iron	hardened and tempered			55 HRC	40					
X Non-metallic materials	Thermoplasts				41						
	Thermosetting plastics				42						
	Plastic, glass-fibre reinforced GFRP				43						
	Plastic, carbon fibre reinforced CFRP				44						
	Graphite				45						
	Wood				46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
 The values have to be adapted in individual cases.
 With hole depths of 5xD adjust the cutting data accordingly to the application.
 For examples of material for cutting tool groups view page D11.

ZSD*		ZSD*		ZTD*		ZTD*		ZTD*		ZD03		ZD03		
SPMX07/09		SPMX11/14		SPGT05/06		SPGT07/09		SPGT11/14		WCMX03-05		WCMX06-08		
v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	
200-300	0,06-0,14	200-300	0,08-0,17	200-300	0,05-0,08	200-300	0,06-0,11	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
200-300	0,06-0,14	200-300	0,08-0,17	200-300	0,05-0,08	200-300	0,06-0,11	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
200-300	0,06-0,14	200-300	0,08-0,17	200-300	0,05-0,08	200-300	0,06-0,11	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
200-300	0,06-0,14	200-300	0,08-0,17	200-300	0,05-0,08	200-300	0,06-0,11	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
140-220	0,06-0,14	140-220	0,09-0,19	140-220	0,05-0,08	140-220	0,07-0,12	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
140-220	0,06-0,14	140-220	0,09-0,19	140-220	0,05-0,08	140-220	0,07-0,12	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
140-220	0,06-0,14	140-220	0,09-0,19	140-220	0,05-0,08	140-220	0,07-0,12	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
140-220	0,06-0,14	140-220	0,09-0,19	140-220	0,05-0,08	140-220	0,07-0,12	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
120-180	0,06-0,14	120-180	0,09-0,19	120-180	0,05-0,08	120-180	0,07-0,12	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
120-180	0,06-0,14	120-180	0,09-0,19	120-180	0,05-0,08	120-180	0,07-0,12	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
110-230	0,06-0,14	110-230	0,08-0,17	110-230	0,05-0,08	110-230	0,06-0,11	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
110-230	0,06-0,14	110-230	0,08-0,17	110-230	0,05-0,08	110-230	0,06-0,11	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
110-230	0,06-0,14	110-230	0,08-0,17	110-230	0,05-0,08	110-230	0,06-0,11	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
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170-240	0,08-0,16	170-240	0,12-0,24	170-240	0,05-0,08	170-240	0,08-0,14	170-240	0,12-0,21	170-240	0,05-0,08	170-240	0,08-0,14	
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130-200	0,08-0,16	130-200	0,12-0,24	130-200	0,05-0,08	130-200	0,08-0,14	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
130-200	0,08-0,16	130-200	0,12-0,24	130-200	0,05-0,08	130-200	0,08-0,14	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
120-220	0,08-0,16	120-220	0,12-0,24	120-220	0,05-0,08	120-220	0,08-0,14	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	
120-220	0,08-0,16	120-220	0,12-0,24	120-220	0,05-0,08	120-220	0,08-0,14	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

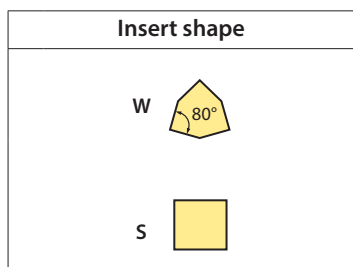
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W C M X 08 04 12 R – PG

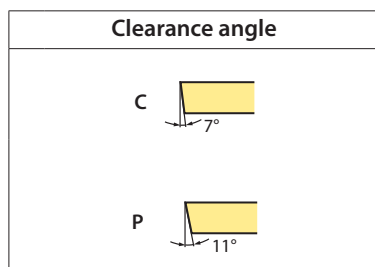
1 2 3 4 5 6 7 8 9

A

Turning



1



2

Tolerance class

Code	I.C [mm]	m [mm]	S [mm]
G	±0,025	±0,025	±0,130
M	±0,05–0,13	±0,08–0,18	±0,130

3

B

Milling

Fastening features (metric)

Insert shape

T ≤ 65°

X Special

4

Cutting edge length l [mm]

I.C [mm]	Insert shape	
	S	W
3,8		03
4,3		04
5,4		05
6,35	06	
6,5		06
8,0		08
8,7	08	
9,252	09	
12,7	12	

5

C

Drilling

Insert thickness S [mm]

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

6

Nose radius r [mm]

Code	r
04	0,4
08	0,8
12	1,2

7

Rotation direction

Code	Description
R	Right
L	Left

8

D

Technical Information

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Chip breaker overview (on page C3)

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