

Definition Key - Identification Code

ANSI	C	-	C	C	G	W	2	1.5	0.5	-	1	N
ISO	C	-	C	C	G	W	06	02	02	-	1	N
	1		2	3	4	5	6	7	8		9	10

1		2		3		4		5						
Insert Style		Insert Shape		Clearance Angle		Tolerances		Pattern Type						
Without	Standard	A	85°	M	86°	A	3°	F	25°	G	ISO mm	ANSI inch	A	
C	Chip breaker	B	82°	O	135°	B	5°	G	30°	m	±0.025	±0.001	N	
L	Full Length	C	80°	P	108°	C	7°	N	0°	IC	±0.025	±0.001	T	
F	Full Face	D	55°	R	90°	D	15°	P	11°	S	±0.130	±0.005	W	
S	Solid	E	75°	S	90°	E	20°			R	±0.03	±0.001	R	
W	Wiper	H	120°	T	60°									
H	Heavy cutting	K	55°	V	35°									
		L	90°	W	80°									

6							7				8				9	
Inscribed Circle Diameter							Insert Thickness				Nose Radius				Cutting Edges	
IC (mm)	C	D	T	V	W	Code									1	single
ISO						ISO	mm	ANSI	inch	ISO	mm	ANSI	inch	2	double	
3.970						01	= 1.59	1	1/16	00	= 0.0	0	.000	3	triple	
4.760			08			02	= 2.38	1.5	3/32	01	= 2.1	0.2	.004	⋮		
5.560			09			T2	= 2.78			02	= 0.2	0.5	.008			
6.350	06	07	11	11		03	= 3.18	2	1/8	04	= 0.4	1	1/64			
7.940						T3	= 3.97	2.5	5/32	08	= 0.8	2	1/32			
9.525	09	11	16	16		04	= 4.76	3	3/16	12	= 1.2	3	3/64			
12.700	12	15			08	05	= 5.56	3.5	7/32	16	= 1.6	4	1/16			
15.875						06	= 6.35	4	1/4	20	= 2.0	5	5/64			
						07	= 7.94	5	5/16	24	= 2.4	6	3/32			
						09	= 9.525	6	3/8	28	= 2.8	7	7/64			

10	
Cutting Direction	
N	
R	
L	

Material Introduction - Easy choice for PCBN Grade

ISO H: Hardened Steel

ISO K: Cast Iron

ISO S: Powder Metallurgy

- Continuous cutting
- ◐ Light interrupted cutting
- ⊞ Medium interrupted cutting
- ⚙ Heavy interrupted cutting

PCBN Grade	ISO H			ISO K		ISO S	
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20
	Smooth	Moderate	Toughness	Cast Iron	Ductile Iron	Powder Metallurgy	Powder Metallurgy
vc	180(150~250) m/min	100(50~150) m/min	80(30~120) m/min	600(300~800) m/min	300(150~450) m/min	300(200~500) m/min	500(300~800) m/min
fn	0.1(0.03~0.2) mm/r	0.1(0.03~0.2) mm/r	0.1(0.03~0.2) mm/r	0.1(0.03~0.3) mm/r	0.1(0.03~0.3) mm/r	0.1(0.03~0.3) mm/r	0.1(0.03~0.3) mm/r
%	45~55	60~70	85~95	85~95	60~70	60~70	85~95
Grain size	1~2 µm	1~2 µm	2~3 µm	2~3 µm	1~2 µm	1~2 µm	2~3 µm
Bond	TiC	TiN	Co/W	Co/W	TiCN	TiCN	Co/W
First Choice	●	◐ ⊞	⚙	● ◐ ⊞ ⚙	● ◐ ⊞ ⚙	● ◐ ⊞ ⚙	● ◐ ⊞ ⚙

● Continuous ◐ Light interrupted ⊞ Medium interrupted ⚙ Heavy interrupted



Application material:
H - Hardened Steel
K - Cast Iron
K - Ductile iron(NCI)
S - Powder metallurgy

Symbol mark:
● Continuous
◐ Light interrupted
◑ Medium interrupted
◒ Heavy interrupted

CCGW	Shape		Dimensions						Applications						
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Φd mm	LE mm	H Coated	H Coated	H Coated	K	K	S	S
									MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20
All Stocked	CCGW21.50.5	CCGW 060202	2N	6.35	2.38	0.2	2.8	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW21.51	CCGW 060204	2N	6.35	2.38	0.4	2.8	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW21.52	CCGW 060208	2N	6.35	2.38	0.8	2.8	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW32.50.5	CCGW 09T302	2N	9.525	3.97	0.2	4.4	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW32.51	CCGW 09T304	2N	9.525	3.97	0.4	4.4	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW32.52	CCGW 09T308	2N	9.525	3.97	0.8	4.4	2.2	●	◐	◑	◒	◒	◒	◒
	CCGW32.53	CCGW 09T312	2N	9.525	3.97	1.2	4.4	2.2	●	◐	◑	◒	◒	◒	◒



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-CCGW060202-2N								41.00	34.00
967-CCGW060204-2N								41.00	34.00
967-CCGW060208-2N								41.00	34.00
967-CCGW09T302-2N								41.00	34.00
967-CCGW09T304-2N								41.00	34.00
967-CCGW09T308-2N								41.00	34.00
967-CCGW09T312-2N								41.00	34.00
967-CCGW120408-2N								41.00	34.00

VE: 10 Stk in einer Verpackung



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CNGA	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	φd mm	LE mm	H	H	H	K	K	S	S	
									Coated	Coated	Coated					
									MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20	

All Stocked

CNGA431	CNGA 120404	2N	12.7	4.76	0.4	5.16	2.2
CNGA432	CNGA 120408	2N	12.7	4.76	0.8	5.16	2.2
CNGA432	CNGA 120408	4N	12.7	4.76	0.8	5.16	2.2



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-CNGA120404-2N								41.00	34.00
967-CNGA120408-2N								41.00	34.00
967-CNGA120412-2N								41.00	34.00
967-CNGA120408-4N								81.00	65.00

VE: 10 Stk in einer Verpackung

DC 55° Positive
7° Relief

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DCGW	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Ød mm	LE mm	H	H	H	K	K	S	S	
All Stocked	DCGW21.51	DCGW 070204	2N	6.35	2.38	0.4	2.8	2.2	Coated	Coated	Coated					
	DCGW21.52	DCGW 070208	2N	6.35	2.38	0.8	2.8	2.2	MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20	
	DCGW32.50.5	DCGW 11T302	2N	9.525	3.97	0.2	4.4	2.2								
	DCGW32.51	DCGW 11T304	2N	9.525	3.97	0.4	4.4	2.2								
	DCGW32.52	DCGW 11T308	2N	9.525	3.97	0.8	4.4	2.2								



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-DCGW070202-2N								41.00	34.00
967-DCGW070204-2N								41.00	34.00
967-DCGW070208-2N								41.00	34.00
967-DCGW11T302-2N								41.00	34.00
967-DCGW11T304-2N								41.00	34.00
967-DCGW11T308-2N								41.00	34.00

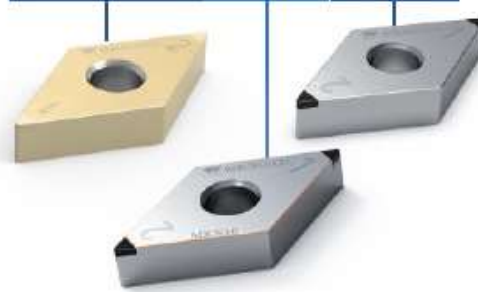
VE: 10 Stk in einer Verpackung



Application material:
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Symbol mark:
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DNGA	Shape		Dimensions					Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Φd mm	LE mm	H Coated MHN 10C	H Coated MHN 20C	H Coated MHN 30C	K MKN 10	K MKN 20	S MSN 10	S MSN 20
All Stocked	DNGA431	DNGA 150404	2N	12.7	4.76	0.4	5.16	2.2	●	◐	◑	◒	◒	◒	◒
	DNGA432	DNGA 150408	2N	12.7	4.76	0.8	5.16	2.2	●	◐	◑	◒	◒	◒	◒
	DNGA433	DNGA 150412	2N	12.7	4.76	1.2	5.16	2.2	●	◐	◑	◒	◒	◒	◒
	DNGA441	DNGA 150604	2N	12.7	6.35	0.4	5.16	2.2	●	◐	◑	◒	◒	◒	◒
	DNGA442	DNGA 150608	2N	12.7	6.35	0.8	5.16	2.2	●	◐	◑	◒	◒	◒	◒



	Sorte						sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10		
967-DNGA150404-2N							41.00	34.00
967-DNGA150408-2N							41.00	34.00
967-DNGA150412-2N							41.00	34.00
967-DNGA150604-2N							41.00	34.00
967-DNGA150608-2N							41.00	34.00
967-DNGA150612-2N							41.00	34.00
967-DNGA150608-4N							81.00	65.00

VE: 10 Stk in einer Verpackung

TC 60°Positive
7°Relief

Application material:
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Symbol mark:
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TCGW	Shape		Dimensions						Applications						
			Tips	IC mm	S mm	R mm	ϕd mm	LE mm	H	H	H	K	K	S	S
	ANSI Code	ISO Code							Coated	Coated	Coated	◐	◑	◒	◐
All Stocked	TCGW1.81.51	TCGW 090204	3N	5.56	2.38	0.4	2.8	2.2	MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20
	TCGW1.81.52	TCGW 090208	3N	5.56	2.38	0.8	2.8	2.2							
	TCGW21.51	TCGW 110204	3N	6.35	2.38	0.4	2.8	2.2							
	TCGW21.52	TCGW 110208	3N	6.35	2.38	0.8	2.8	2.2							
	TCGW221	TCGW 110304	3N	6.35	3.18	0.4	2.8	2.2							
	TCGW222	TCGW 110308	3N	6.35	3.18	0.8	2.8	2.2							



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-TCGW090202-3N								61.00	50.00
967-TCGW090204-3N								61.00	50.00
967-TCGW090208-3N								61.00	50.00
967-TCGW110204-3N								61.00	50.00
967-TCGW110208-3N								61.00	50.00
967-TCGW110304-3N								61.00	50.00
967-TCGW110308-3N								61.00	50.00

VE: 10 Stk in einer Verpackung

TN 60°
Negative

Application materia:
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Symbol mark:
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TNGA	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Φd mm	LE mm	H	H	H	K	K	S	S	
All Stocked	TNGA332	TNGA 160408	3N	9.525	4.76	0.8	3.81	2.2	Coated	Coated	Coated					
	TNGA333	TNGA 160412	3N	9.525	4.76	1.2	3.81	2.2	MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20	

	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-TNGA160404-3N								61.00	50.00
967-TNGA160408-3N								61.00	50.00
967-TNGA160412-3N								61.00	50.00

VE: 10 Stk in einer Verpackung

TP
60°Positive
11°Relief

Application materia:
H - Hardened Steel
K - Cast Iron
K - Ductile iron(NCI)
S - Powder metallurgy

Symbol mark:
● Continuous
◐ Light interrupted
◑ Medium interrupted
◒ Heavy interrupted

TPGW	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	φd mm	LE mm	H	H	H	K	K	S	S	
									Coated	Coated	Coated					
									MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20	
All Stocked	TPGW1.51.51	TPGW 080204	3N	4.76	2.38	0.4	2.4	2.2								
	TPGW1.51.52	TPGW 080208	3N	4.76	2.38	0.8	2.4	2.2								
	TPGW1.81.50.5	TPGW 090202	3N	5.56	2.38	0.2	2.8	2.2								
	TPGW1.81.51	TPGW 090204	3N	5.56	2.38	0.4	2.8	2.2								
	TPGW21.51	TPGW 110204	3N	6.35	2.38	0.4	2.8	2.2								
	TPGW21.52	TPGW 110208	3N	6.35	2.38	0.8	2.8	2.2								
	TPGW220.5	TPGW 110302	3N	6.35	3.18	0.2	3.3	2.2								
	TPGW221	TPGW 110304	3N	6.35	3.18	0.4	3.3	2.2								



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-TPGW080202-3N								61.00	50.00
967-TPGW080204-3N								61.00	50.00
967-TPGW080208-3N								61.00	50.00
967-TPGW090202-3N								61.00	50.00
967-TPGW090204-3N								61.00	50.00
967-TPGW110204-3N								61.00	50.00
967-TPGW110208-3N								61.00	50.00
967-TPGW110302-3N								61.00	50.00
967-TPGW110304-3N								61.00	50.00

VE: 10 Stk in einer Verpackung

	Sorte						sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10		
967-VBGW160402-2N							41.00	34.00
967-VBGW160404-2N							41.00	34.00
967-VBGW160408-2N							41.00	34.00
967-VBGW160412-2N							41.00	34.00

VE: 10 Stk in einer Verpackung



Application materia:
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Symbol mark:
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⊛ Heavy interrupted

VCGW	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Φd mm	LE mm	H	H	H	K	K	S	S	
									Coated	Coated	Coated					
									MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20	
All Stocked	VCGW221	VCGW 110304	2N	6.35	3.18	0.4	2.8	2.2								
	VCGW222	VCGW 110308	2N	6.35	3.18	0.8	2.8	2.2								
	VCGW331	VCGW 160404	2N	9.525	4.76	0.4	4.4	2.2								
	VCGW332	VCGW 160408	2N	9.525	4.76	0.8	4.4	2.2								



	Sorte						sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10		
967-VCGW110302-2N							41.00	34.00
967-VCGW110304-2N							41.00	34.00
967-VCGW110308-2N							41.00	34.00
967-VCGW160404-2N							41.00	34.00
967-VCGW160408-2N							41.00	34.00

VE: 10 Stk in einer Verpackung

VN 35°
Negative

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VNGA	Shape		Dimensions						Applications							
	ANSI Code	ISO Code	Tips	IC mm	S mm	R mm	Φd mm	LE mm	H	H	H	K	K	S	S	
All Stocked	VNGA330.5	VNGA 160402	2N	9.525	4.76	0.2	3.81	2.2	Coated	Coated	Coated					
	VNGA331	VNGA 160404	2N	9.525	4.76	0.4	3.81	2.2								
	VNGA332	VNGA 160408	2N	9.525	4.76	0.8	3.81	2.2								
	VNGA333	VNGA 160412	2N	9.525	4.76	1.2	3.81	2.2								



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-VNGA160402-2N								41.00	34.00
967-VNGA160404-2N								41.00	34.00
967-VNGA160408-2N								41.00	34.00
967-VNGA160412-2N								41.00	34.00

VE: 10 Stk in einer Verpackung



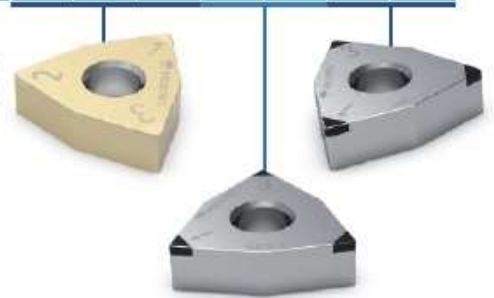
Application materials:
H - Hardened Steel
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Symbol mark:
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WNGA	Shape		Dimensions						Applications						
			Tips	IC mm	S mm	R mm	φd mm	LE mm	H	H	H	K	K	S	S
	ANSI Code	ISO Code							Coated	Coated	Coated				
MHN 10C	MHN 20C	MHN 30C	MKN 10	MKN 20	MSN 10	MSN 20									

All Stocked

WNGA431	WNGA080404	3N	12.7	4.76	0.4	5.16	2.2
WNGA342	WNGA080408	3N	12.7	4.76	0.8	5.16	2.2



	Sorte							sFr. / Stk.	sFr. / Stk. VE
	MHN10C	MHN20C	MHN30C	MKN10	MKN20	MSN10	MSN20		
967-WNGA080404-3N								61.00	50.00
967-WNGA080408-3N								61.00	50.00
967-WNGA080408-6N								112.00	90.00

VE: 10 Stk in einer Verpackung