


C
N
M
G
12

1
2
3
4
5


Insert Shape Relief Angle Tolerance Cross Section Type Cutting Edge Length, Diameter of Inscribed Circle

1 Insert Shape


1
C
N
M
G
12
04
08
 - MP




C




D




E




K




L




R




S



T



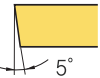
V




W

2 Relief Angle


2
C
N
M
G
12
04
08
 - MP




B



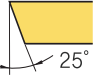
C




D




E




F



N



P

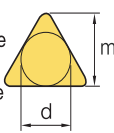
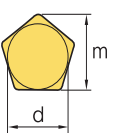
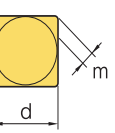
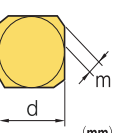


O

3 Tolerance

3
C
N
M
G
12
04
08
 - MP

d : Inscribed circle
 t : Thickness
 m : Refer to figure

Class	d	m	t
A	± 0.025	± 0.005	± 0.025
C	± 0.025	± 0.013	± 0.025
H	± 0.013	± 0.013	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.13
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	± 0.13
N *	± 0.05 ~ ± 0.15	± 0.08 ~ ± 0.18	± 0.025
U *	± 0.08 ~ ± 0.25	± 0.13 ~ ± 0.38	± 0.13

* Sides are based on unground insert

Tolerance on C, E, H, M, O, P, R, S, T, W Insert Shape (Exceptional case)

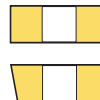
d	Tolerance on d		Tolerance on m	
	J, K, L, M, N, U	U	M, N	U
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525	± 0.05	± 0.08	± 0.08	± 0.13
12.7	± 0.08	± 0.13	± 0.13	± 0.20
15.875	± 0.10	± 0.18	± 0.15	± 0.27
19.05	± 0.10	± 0.18	± 0.15	± 0.27
25.4	± 0.13	± 0.25	± 0.18	± 0.38

Tolerance on D Insert Shape (Exceptional case)

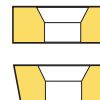
d	Tolerance on d	Tolerance on m
6.35	± 0.05	± 0.11
9.525	± 0.05	± 0.11
12.7	± 0.08	± 0.15
15.875	± 0.10	± 0.18
19.05	± 0.10	± 0.18

4 Cross Section Type


4
C
N
M
G
12
04
08
 - MP




A



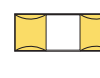
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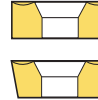
C



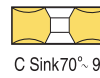
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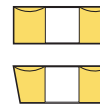
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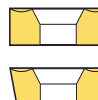
H




J



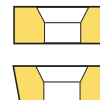
M




N



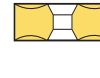
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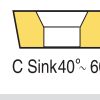
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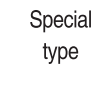
T



U



W



X

04 **08** - **MP**

6 7 8

Height of Cutting Edge

Nose Radius (Nose R)

Chip Breaker for Turning

5 Cutting Edge Length, Diameter of Incribed Circle


C N M G 12 04 08 - MP

Symbol								Inch	IC d (mm)
C	d	S	T	R	V	W			
03	04	03	06	03	-	02	1.2(5)	3.97	
04	05	04	08	04	08	S3	1.5(6)	4.76	
05	06	05	09	05	09	03	1.8(7)	5.56	
-	-	-	-	06	-	-	-	6.00	
06	07	06	11	06	11	04	2	6.35	
08	09	07	13	07	13	05	2.5	7.94	
-	-	-	-	08	-	-	-	8.00	
09	11	09	16	09	16	06	3	9.525	
-	-	-	-	10	-	-	-	10.00	
11	13	11	19	11	19	07	3.5	11.11	
-	-	-	-	12	-	-	-	12.00	
12	15	12	22	12	22	08	4	12.70	
14	17	14	24	14	24	09	4.5	14.29	
16	19	15	27	15	27	10	5	15.875	
-	-	-	-	16	-	-	-	16.00	
17	21	17	30	17	30	11	5.5	17.46	
19	23	19	33	19	33	13	6	19.05	
-	-	-	-	20	-	-	-	20.00	
22	27	22	38	22	38	15	7	22.225	
-	-	-	-	25	-	-	-	25.00	
25	31	25	44	25	44	17	8	25.40	
32	38	31	54	31	54	21	10	31.75	
-	-	-	-	32	-	-	-	32.00	

() Symbol for small size insert

7 Nose Radius (Nose R)

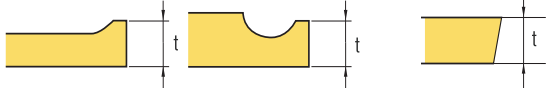
C N M G 12 04 08 - MP



Symbol		Corner Radius	
Metric	Inch	Metric	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round insert (Inch)	
M0	-	Round insert (Metric)	

6 Height of Cutting Edge

C N M G 12 04 08 - MP




Symbol		Height of Cutting Edge (t)	
Metric	Inch	mm	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

() Symbol for small size insert


8 Chip Breaker for Turning

C N M G 12 04 08 - MP

Negative Insert Chip Breaker




PF PM GM MP MK No Chipbreaker




25UL 15D 15M 24UL


Positive Insert Chip Breaker



PS MM KS



13U 15V 15U 12U



16X 15K 14VI AL

Work Materials		Work Condition	Grade	Cutting Speed (m/min)	ISO	Cutting Performance
P	Steel	Continuous	TP710	150-360	P01	
			TP7110	150-360	P10	TP710
			TC580	100-250	P20	TP7110 TC580
			TC680	100-250	P30	TC680 TP720 TP7220
		Interrupted	TP720	120-280	P40	
			TP7220	120-280	P50	
M	Stainless Steel	Continuous	TM810	100-220	M01	
			TM8110	100-220	M10	TM810
			TJ15	50-180	M20	TM8110 TJ15
			TJ20U	50-180	M30	TJ20U TM820 TM8220
		Interrupted	TM820	100-220	M40	
			TM8220	100-220	M50	
K	Cast Iron	Continuous	TK910	200-400	K01	
			TK9110	200-400	K10	TK910 TK9110
		Interrupted	TK920	150-300	K20	TK920
			TK9220	150-300	K30	TK9220
N	Non-ferrous Metal	Continuous	TN320	100-1000	N10	
					N20	TN320

Work Materials	ISO	Coated Carbide			Cermet
		CVD	PVD	No Coated	
P Steel	P01				TC580
	P10	TP710			TC680
	P20	TP710	TP720		
	P30		TP720		
	P40				
	P50				
M Stainless Steel	M01				
	M10		TM810		
	M20		TM810	TJ15	
	M30		TM810	TJ20U	
	M40			TM820	
	M50			TM820	
K Cast Iron	K01				
	K10	TK910	TK9110		
	K20			TK920	
	K30			TK9220	
N Non-ferrous Metal	N10				
	N20			TN320	
S Superalloys Titanium	S01				
	S10		TS410		
	S20			TS420	
	S30				

Chipbreaker	Features	Application	Cutting Edge
PF	First choice chipbreaker for finishing steels. The dimple structure decreases the contact area between the insert surface and chips, resulting in significant reduction of heat occurrence..		
PM	General purpose chipbreaker used for medium cutting. Unique chipbreaker geometry with sharp edges and large rake angle assures free cutting action in a wide range of cutting conditions.		
MP	Exellent chip control when finish cutting. Outstanding chip control when high feed turning at small depth of cut.		
GM	Applicable to a wide range of cutting condition with sharp edge. Recommended chipbreaker for stainless steel turning.		
MK	Highly reliable chipbreaker for medium cutting under a wide range of conditions from continuous from continuous to interrupted cutting. Recommended chipbreaker for cast irons turning.		
No Chipbreaker	Can cover a wide range of applications from finishing to roughing of cast irons. Excellent in cutting edge strength.		
PS	3-dimensional chipbreaker designed to have excellent chip control capability and low cutting force in finishing to medium cutting. Low cost, M-class positive insert used for high efficiency in a wide range of applications.		

Chipbreaker	Features	Application	Cutting Edge
MM	Developed chipbreaker for medium cutting. Excellent chip control due to wide, positive chip flow zone.		
KS	Highly reliable chipbreaker for medium cutting under a wide range of conditions from continuous to interrupted cutting.		
25UL	High positive cutting edge reduces chip contact. Minimized temperature while machining ensures longer tool life. Stable machining with superior chip evacuation in high depth of cut.		
15D	Excellent chip control at wide range of cutting conditions. Suitable for stainless steel cutting.		
15M	Shallow depth of cut with sharp edge. Longer tool life at high speed cutting due to low cutting force. Good finishing surface.		
24UL	High positive cutting edge reduces chip contact. Minimized temperature while machining ensures longer tool life. Stable machining with superior chip evacuation in high depths of cut.		
15V	Longer tool life due to minimizing chip contact and reducing cutting heat while machining.		
12U/13U/15U	Improved chip control makes tool life longer and better machining.		

Chipbreaker	Features	Application	Cutting Edge
16X	Stable machinability in interrupted machining toughness. Stable chip evacuation and machining in machining with high depth of cut.		
15K	Excellent chip control in application with micro depth of cut and low feed. Low cutting load and super finishing surface. Excellent for both internal and external machining.		
14VI	Longer tool life due to minimizing chip contact and reducing cutting heat while machining.		
AL	Extremely sharp cutting edge. Polished surface. Excellent chip forming at high cutting feeds. Low power consumption.		

● : Continuous Cutting ▲ : Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets				
				TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15			TJ20U	TN320	TC580	TC680
Medium Cutting		TNGG160401R/L-15D	0.1	●	▲	●	▲															●	●		
		TNGG160402R/L-15D	0.2					●	▲	●	▲									●	●				
		TNGG160404R/L-15D	0.4																				●		
		TNGG160408R/L-15D	0.8																				●		
		TNGG160402R/L-15M	0.2																					●	
		TNGG160404R/L-15M	0.4																					●	
		TNGG160408R/L-15M	0.8																					●	
		TNGG160402R/L-24UL	0.2																					●	
		TNGG160404R/L-24UL	0.4																					●	

External Toolholders:P25
Internal Toolholders:P35




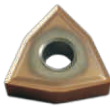


● : Continuous Cutting ▲ : Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets				
				TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15			TJ20U	TN320	TC580	TC680
Finishing		VNMG160404-PF	0.4	●	▲	●	▲																●	●	
		VNMG160408-PF	0.8	●	●																				
		VNMG220404-PF	0.4	○	○																				
		VNMG220408-PF	0.8	○	○																				
Medium Cutting		VNMG160404-PM	0.4	●	○																				
		VNMG160408-PM	0.8	●	●																				
		VNMG160412-PM	1.2	○	●																				
		VNMG160404-GM	0.4					●																	
		VNMG160408-GM	0.8					●																	
		VNMG160404-MP	0.4					●																	
		VNMG160408-MP	0.8					●																	
		VNMG160404-MK	0.4								●	●													
VNMG160408-MK		0.8								●	●														
		VNMG160412-MK	1.2							●	○														

● In Stock ○ Inquiry Each Time

External Toolholders:P26
Internal Toolholders:P35




● : Continuous Cutting ▲ : Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets							
				TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15			TJ20U	TN320	TC580	TC680			
				W	N	M	P	S	H	K	N	M	P	S	H	K	N	M	P			S	H	K	N	M	P	S
Medium Cutting		WNMG060404-PF	0.4	○	●																							
		WNMG060408-PF	0.8	○	●																							
		WNMG080404-PF	0.4	●	○																							
		WNMG080408-PF	0.8	●	●																							
		WNMG060404-PM	0.4	○	○																							
		WNMG060408-PM	0.8	●	○																							
		WNMG060412-PM	1.2	●																								
		WNMG080404-PM	0.4	●	●																							
		WNMG080408-PM	0.8	●	●																							
		WNMG080412-PM	1.2	●	●																							
		WNMG060408-GM	0.8							●																		
		WNMG080404-GM	0.4							●																		
		WNMG080408-GM	0.8							●																		
		WNMG080412-GM	1.2							●																		
		WNMG060408-MP	0.8							●																		
		WNMG080404-MP	0.4							●																		
		WNMG080408-MP	0.8							●																		
		WNMG080412-MP	1.2							●																		
		WNMG080404-MK	0.4								●	●																
		WNMG080408-MK	0.8								●	●																
WNMG080412-MK		1.2								●	●																	
WNMA060404		0.4								○	○																	
	WNMA060408	0.8								○	○																	
	WNMA080404	0.4								●	●																	
	WNMA080408	0.8								●	●																	
	WNMA080412	1.2								●	●																	

● In Stock ○ Inquiry Each Time




External Toolholders:P27
Internal Toolholders:P35

● : Continuous Cutting ▲ : Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets			
				TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15		TJ20U	TN320	TC580	TC680
Finishing to Medium Cutting		DCGT11T302RL-15M	0.2	●	▲	●	▲															●	●	
		DCGT11T304RL-15M	0.4					●	▲	●	▲								●	●				
		DCGT11T3005RL-15U	0.05																					
		DCGT11T301R/L-15U	0.1																				●	
		DCGT11T302R/L-15U	0.2																					●
		DCGT11T304R/L-15U	0.4																					●
		DCGT070204-AL	0.4																			●		
		DCGT070208-AL	0.8																			●		
		DCGT11T302-AL	0.2																			●		
		DCGT11T304-AL	0.4																			●		
		DCGT11T308-AL	0.8																			●		
		DCGT11T312-AL	1.2																			●		

External Toolholders:P28
Internal Toolholders:P36



● : Continuous Cutting ▲ Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets			
				TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15		TJ20U	TN320	TC580	TC680
Finishing to Medium Cutting		SCMT09T304-PS	0.4		●																			
		SCMT09T308-PS	0.8	●	●						●													
		SCMT120404-PS	0.4		●																			
		SCMT120408-PS	0.8		●																			
		SCMT09T308-KS	0.8		○						○													
		SCMT120408-KS	0.8		○						○													
		SCGT09T304-AL	0.4																			●		
		SCGT09T308-AL	0.8																			●		
		SCGT120404-AL	0.4																			●		
		SCGT120408-AL	0.8																			●		

● In Stock ○ Inquiry Each Time








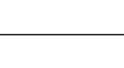

External Toolholders:P29 9

● : Continuous Cutting ▲ : Light Interrupted Cutting





Application		Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermet			
					TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15		TJ20U	TN320	TC580	TC680
Finishing to Medium Cutting		TPGH080202R/L-15K	0.2	●	▲	●	▲																●	●	
		TPGH080204R/L-15K	0.4					●	▲	●	▲									●	●				
		TPGH090201R/L-15K	0.1																						
		TPGH090202R/L-15K	0.2																						
		TPGH090204R/L-15K	0.4																						
		TPGH110202R/L-15K	0.2																						
		TPGH110204R/L-15K	0.4																						
		TPGH110302R/L-15K	0.2																						
	TPGH110304R/L-15K	0.4																							
		TPGH080201R/L-15K	0.1																					●	
		TPGH080202R/L-15K	0.2																					●	●
		TPGH080204R/L-15K	0.4																					●	●
		TPGH090201R/L-15K	0.1																					●	
		TPGH090202R/L-15K	0.2																					●	●
		TPGH090204R/L-15K	0.4																					●	●
		TPGH110302R/L-15K	0.2																					●	●
		TPGH110304R/L-15K	0.4																					●	●
		TPGH110202R/L-15K	0.2																					●	●
		TPGH110204R/L-15K	0.4																						●

Internal Toolholders:P39

● : Continuous Cutting ▲ : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets						
					TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15			TJ20U	TN320	TC580	TC680		
					VB																							
Rhombic 60°	P	Steel		●	▲	●	▲																		●	●		
	M	Stainless						●	▲	●	▲								●	●								
	Positive 5°	K	Cast Iron										●	▲	●	▲												
		N	Non-ferrous																					●				
	with Hole	S	Superalloys													●	▲											
		H	Hard Materials															●										
Finishing to Medium Cutting		VBMT160404-PS	0.4	●	●																							
		VBMT160408-PS	0.8	○	●																							
		VBMT110304-MM	0.4						●																			
		VBMT160404-MM	0.4						●																			
		VBMT160408-MM	0.8						●																			
		VBMT160408-KS	0.8		○																							
		VBGT1103005R/L-15V	0.05																		●							
		VBGT110301R/L-15V	0.1																		●							
		VBGT110302R/L-15V	0.2																			●						
		VBGT110304R/L-15V	0.4																			●						
		VBGT1103005R/L-14VI	0.05																		●							
		VBGT110301R/L-14VI	0.1																		●							
		VBGT110302R/L-14VI	0.2																			●						
		VBGT110304R/L-14VI	0.4																			●						
		VBGT1103003R/L-12U	0.03																		●							
		VBGT1103005R/L-12U	0.05																		●							
		VBGT110301R/L-12U	0.1																		●							
		VBGT110302R/L-12U	0.2																			●						
		VBGT110304R/L-12U	0.4																			●						
		VBGT1103005R/L-14VI	0.05																								●	
		VBGT110301R/L-14VI	0.1																								●	
		VBGT110302R/L-14VI	0.2																								●	
		VBGT110304R/L-14VI	0.4																								●	
		VBGT1103005R/L-15M	0.05																							●		
		VBGT110301R/L-15M	0.1																							●		
		VBGT110302R/L-15M	0.2																							●		
		VBGT110304R/L-15M	0.4																							●		
		VBGT110302-AL	0.2																						●			
		VBGT110304-AL	0.4																						●			
		VBGT160404-AL	0.4																						●			
		VBGT160408-AL	0.8																						●			


● : Continuous Cutting ▲ : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets			
					TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15		TJ20U	TN320	TC580	TC680
Finishing to Medium Cutting	 	VCMT110304-PS	0.4	●	▲	●	▲															●	●		
		VCMT160404-PS	0.4	●	●						●												●	●	
		VCMT160408-PS	0.8	●	●						●														
		VCMT160404-KS	0.4		○						○														
		VCMT160408-KS	0.8		○						○														
		VCMT1103005R/L-15V	0.05																●						
	 	VCMT110301R/L-15V	0.1															●							
		VCMT110302R/L-15V	0.2																●						
		VCMT110304R/L-15V	0.4																●						
		VCMT1103003R/L-12U	0.03																●						
		VCMT1103005R/L-12U	0.05																●						
		VCMT110301R/L-12U	0.1																●						
		VCMT110302R/L-12U	0.2																●						
		VCMT110304R/L-12U	0.4																●						

● In Stock ○ Inquiry Each Time


External Toolholders:P32
Internal Toolholders:P40

● : Continuous Cutting ▲ : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermets			
					TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15		TJ20U	TN320	TC580	TC680
Finishing to Medium Cutting		VPET1103005R/L-15M	0.05															●							
		VPET1103008R/L-15M	0.08																●						
		VPET110301R/L-15M	0.1																●						
		VPET110302R/L-15M	0.2																●						
		VPET110304R/L-15M	0.4																●						
		VPET110308R/L-15M	0.8																●						

● In Stock ○ Inquiry Each Time

● : Continuous Cutting ▲ : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coating																No Coated	Cermet			
					TP710	TP720	TP7110	TP7220	TM810	TM820	TM8110	TM8220	TK910	TK920	TK9110	TK9220	TS410	TS420	TH520	TJ15			TJ20U	TN320	TC580
WC	Square 90°	P	Steel		●	▲	●	▲															●	●	
		M	Stainless					●	▲	●	▲								●	●					
	Positive 7°	K	Cast Iron									●	▲	●	▲										
		N	Non-ferrous																				●		
with Hole	S	Superalloys													●	▲									
	H	Hard Materials														●									
Medium Cutting		WCMT06T304-PS	0.4	○	○																				
		WCMT06T308-PS	0.8	○	●																				

● In Stock ○ Inquiry Each Time