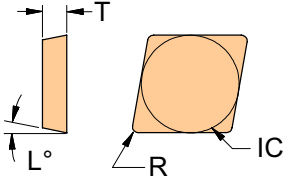
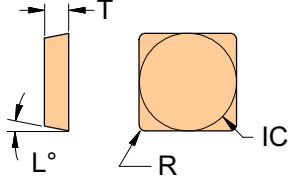
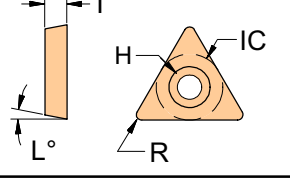
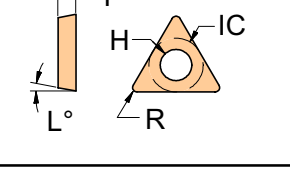
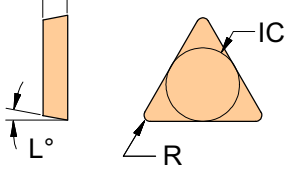
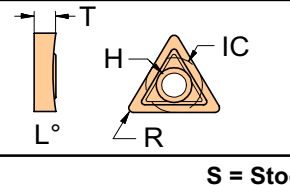
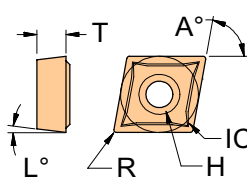
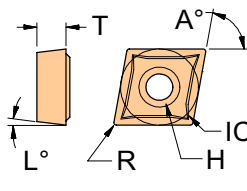
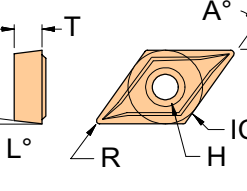
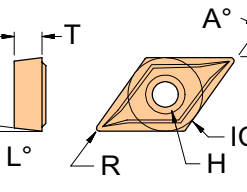
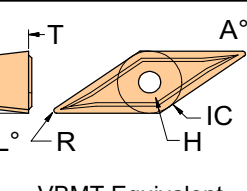
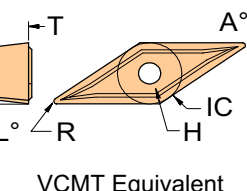


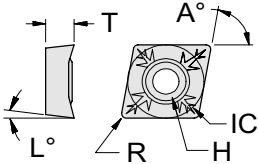
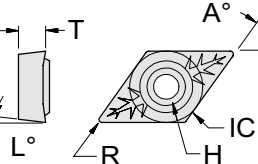
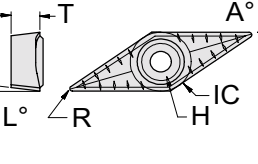
Style:	Insert	Dimensions						Grades				
ANSI - ISO Standards	Description	L	A	R	T	IC	H	C23	123	156	323	356
 <p>Additional Corner Radius Sizes Available On Request</p>	CPG 420	11°	80°	.004	.125	.500		S	S	LS	S	LS
	CPG 420.5	11°	80°	.008	.125	.500		S	S	LS	S	LS
	CPG 421	11°	80°	.016	.125	.500		S	S	S	S	LS
	CPG 422	11°	80°	.031	.125	.500		S	S	S	S	LS
	CPG 423	11°	80°	.047	.125	.500		S	S	LS	S	LS
	CFG 4620	25°	80°	.004	.125	.464		S	S	LS	S	LS
	CFG 4621	25°	80°	.016	.125	.464		S	S	LS	S	LS
	CFG 4622	25°	80°	.031	.125	.464		S	S	LS	S	LS
	SPG 420	11°	90°	.004	.125	.500		S	S	LS	S	LS
	SPG 420.5	11°	90°	.008	.125	.500		S	S	LS	S	LS
	SPG 421	11°	90°	.016	.125	.500		S	S	LS	S	S
	SPG 422	11°	90°	.031	.125	.500		S	S	LS	S	S
	SPG 423	11°	90°	.047	.125	.500		S	S	LS	S	LS
	TD 6P R002	10°	60°	.002	.125	.375	.125	S	S	LS	S	LS
	TD 6P R007	10°	60°	.007	.125	.375	.125	S	S	LS	S	LS
	TD 6P R015	10°	60°	.015	.125	.375	.125	S	S	LS	S	LS
	TD 6P	10°	60°	.031	.125	.375	.125	S	S	LS	S	LS
	TP 40	10°	60°	.005	.094	.250	.137	S	S	LS	S	LS
	TP 41	10°	60°	.016	.094	.250	.137	S	S	LS	S	LS
	TP 42	10°	60°	.031	.094	.250	.137	S	S	LS	S	LS
	TP 61	10°	60°	.016	.125	.375	.163	S	S	LS	S	LS
	TP 62	10°	60°	.031	.125	.375	.163	S	S	LS	S	LS
 <p>Additional Corner Radius Sizes Available On Request</p> <p>* TFG Inserts in Grade C23 Come with J Polished Tops</p>	TFG 320.5 J *	25°	60°	.008	.125	.375		LS	LS	LS	LS	LS
	TFG 321 J *	25°	60°	.016	.125	.375		S	LS	LS	LS	LS
	TFG 322 J *	25°	60°	.031	.125	.375		S	LS	LS	S	LS
	TPG 221	11°	60°	.016	.125	.250		LS	LS	LS	LS	LS
	TPG 222	11°	60°	.031	.125	.250		LS	LS	LS	LS	LS
	TPG 320 R003	11°	60°	.003	.125	.375		S	S	LS	S	LS
	TPG 320 R005	11°	60°	.005	.125	.375		S	S	S	S	S
	TPG 320.5	11°	60°	.008	.125	.375		S	S	S	S	LS
	TPG 321	11°	60°	.016	.125	.375		S	S	S	S	S
	TPG 322	11°	60°	.031	.125	.375		S	S	S	S	S
	TPG 323	11°	60°	.047	.125	.375		S	S	LS	S	LS
	TPG 324	11°	60°	.062	.125	.375		S	S	S	S	LS
	TPG 430	11°	60°	.004	.1875	.500		S	S	LS	S	LS
	TPG 430.5	11°	60°	.008	.1875	.500		S	S	LS	S	LS
TPG 431	11°	60°	.016	.1875	.500		S	S	LS	S	LS	
TPG 432	11°	60°	.031	.1875	.500		S	S	LS	S	LS	
TPG 433	11°	60°	.047	.1875	.500		S	S	LS	S	LS	
	T221P	0°	60°	.016	.125	.250	.094	S	S	LS	S	LS
	T321P	0°	60°	.016	.125	.375	.152	S	S	LS	S	LS
For Kennametal® Tool Holders & Boring Bars												
S = Stock Standard      LS = Limited Stock or Non-Stock - Call for Availability												

# TURNING INSERTS

Style:	Insert	Dimensions						Grades				
ANSI - ISO Standards	Description	L	A	R	T	IC	H	C23	123	156	323	356
 <p>CCMT Equivalent</p>	CCGT 21.50 .002	7°	80°	.002	.094	.250	.110	S	S	NA	S	NA
	CCGT 21.50	7°	80°	.004	.094	.250	.110	S	S	S	S	S
	CCGT 21.50.5	7°	80°	.008	.094	.250	.110	S	S	S	S	S
	CCGT 21.51	7°	80°	.016	.094	.250	.110	S	S	S	S	S
	CCGT 21.52	7°	80°	.031	.094	.250	.110	S	S	S	S	S
	CCGT 32.50 .002	7°	80°	.002	.156	.375	.173	S	S	NA	S	NA
	CCGT 32.50	7°	80°	.004	.156	.375	.173	S	S	S	S	S
	CCGT 32.50.5	7°	80°	.008	.156	.375	.173	S	S	S	S	S
	CCGT 32.51	7°	80°	.016	.156	.375	.173	S	S	S	S	S
	CCGT 32.52	7°	80°	.031	.156	.375	.173	S	S	S	S	S
 <p>CPGM - CPMT Equivalent</p>	CPGT 21.50 .002	11°	80°	.002	.094	.250	.110	S	S	NA	S	NA
	CPGT 21.50	11°	80°	.004	.094	.250	.110	S	S	S	S	S
	CPGT 21.50.5	11°	80°	.008	.094	.250	.110	S	S	S	S	S
	CPGT 21.51	11°	80°	.016	.094	.250	.110	S	S	S	S	S
	CPGT 21.52	11°	80°	.031	.094	.250	.110	S	S	S	S	S
	CPGT 32.50 .002	11°	80°	.002	.156	.375	.173	S	S	NA	S	NA
	CPGT 32.50	11°	80°	.004	.156	.375	.173	S	S	S	S	S
	CPGT 32.50.5	11°	80°	.008	.156	.375	.173	S	S	S	S	S
	CPGT 32.51	11°	80°	.016	.156	.375	.173	S	S	S	S	S
	CPGT 32.52	11°	80°	.031	.156	.375	.173	S	S	S	S	S
 <p>DCMT Equivalent</p>	DCGT 21.50	7°	55°	.004	.094	.250	.110	S	S	NA	S	NA
	DCGT 21.50.5	7°	55°	.008	.094	.250	.110	S	S	LS	S	LS
	DCGT 21.51	7°	55°	.016	.094	.250	.110	S	S	LS	S	LS
	DCGT 21.52	7°	55°	.031	.094	.250	.110	S	S	LS	S	LS
	DCGT 32.50	7°	55°	.004	.156	.375	.173	S	S	NA	LS	NA
	DCGT 32.50.5	7°	55°	.008	.156	.375	.173	S	S	LS	S	LS
	DCGT 32.51	7°	55°	.016	.156	.375	.173	S	S	LS	S	LS
	DCGT 32.52	7°	55°	.031	.156	.375	.173	S	S	LS	S	LS
 <p>DPMT Equivalent</p>	DPGT 21.50	11°	55°	.004	.094	.250	.110	LS	LS	NA	LS	NA
	DPGT 21.50.5	11°	55°	.008	.094	.250	.110	S	S	LS	S	LS
	DPGT 21.51	11°	55°	.016	.094	.250	.110	S	S	LS	S	LS
	DPGT 21.52	11°	55°	.031	.094	.250	.110	S	S	LS	S	LS
	DPGT 32.50	11°	55°	.004	.156	.375	.173	S	S	NA	S	NA
	DPGT 32.50.5	11°	55°	.008	.156	.375	.173	S	S	LS	S	LS
	DPGT 32.51	11°	55°	.016	.156	.375	.173	S	S	LS	S	LS
	DPGT 32.52	11°	55°	.031	.156	.375	.173	S	S	LS	S	LS
 <p>VBMT Equivalent</p>	VBGT 220.5	5°	35°	.008	.125	.250	.110	S	S	LS	S	LS
	VBGT 221	5°	35°	.016	.125	.250	.110	S	S	LS	S	LS
	VBGT 222	5°	35°	.031	.125	.250	.110	S	S	LS	S	LS
	VBGT 330	5°	35°	.004	.1875	.375	.173	S	S	LS	S	LS
	VBGT 330.5	5°	35°	.008	.1875	.375	.173	S	S	LS	S	LS
	VBGT 331	5°	35°	.016	.1875	.375	.173	S	S	LS	S	LS
	VBGT 332	5°	35°	.031	.1875	.375	.173	S	S	LS	S	LS
 <p>VCMT Equivalent</p>	VCGT 220.5	7°	35°	.008	.125	.250	.110	S	S	LS	S	LS
	VCGT 221	7°	35°	.016	.125	.250	.110	S	S	LS	S	LS
	VCGT 222	7°	35°	.031	.125	.250	.110	S	S	LS	S	LS
	VCGT 330	7°	35°	.004	.1875	.375	.173	S	S	LS	S	LS
	VCGT 330.5	7°	35°	.008	.1875	.375	.173	S	S	LS	S	LS
	VCGT 331	7°	35°	.016	.1875	.375	.173	S	S	LS	S	LS
	VCGT 332	7°	35°	.031	.1875	.375	.173	S	S	LS	S	LS

S = Stock Standard

LS = Limited Stock or Non-Stock - Call for Availability

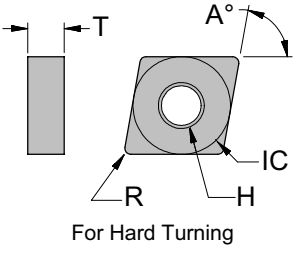
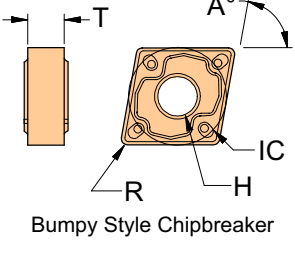
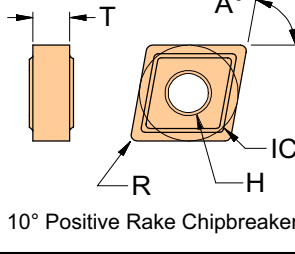
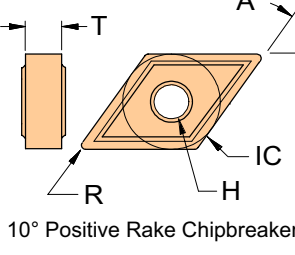
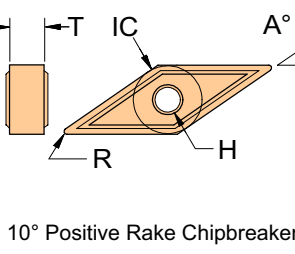
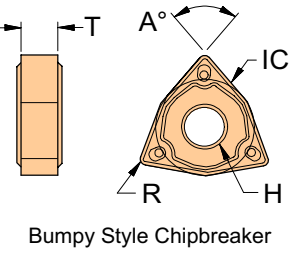
Style:	Insert	Dimensions						Grades	
ANSI-ISO High Positive Rake For Aluminum	Description	L	A	R	T	IC	H	C23J	323F
 <p>25° Positive Rake Chipbreaker</p>	CCGT 21.50.5-25P CCGT 060202FN-25P	7°	80°	.008	.094	.250	.110	S	S
	CCGT 21.51-25P CCGT 060204FN-25P	7°	80°	.016	.094	.250	.110	S	S
	CCGT 09T301FN-25P CCGT 32.50-25P	7°	80°	.004	.156	.375	.173	S	S
	CCGT 09T302FN-25P CCGT 32.50.5-25P	7°	80°	.008	.156	.375	.173	S	S
	CCGT 09T304FN-25P CCGT 32.51-25P	7°	80°	.016	.156	.375	.173	S	S
	CCGT 09T308FN-25P CCGT 32.52-25P	7°	80°	.031	.156	.375	.173	S	S
	CCGT 430.5-25P CCGT 120402FN-25P	7°	80°	.008	.1875	.500	.216	S	S
	CCGT 431-25P CCGT 120404FN-25P	7°	80°	.016	.1875	.500	.216	S	S
	CCGT 432-25P CCGT 120408FN-25P	7°	80°	.031	.1875	.500	.216	S	S
 <p>25° Positive Rake Chipbreaker</p>	DCGT 21.50.5-25P DCGT 070202FN-25P	7°	55°	.008	.094	.250	.110	S	LS
	DCGT 21.51-25P DCGT 070204FN-25P	7°	55°	.016	.094	.250	.110	S	LS
	DCGT 32.50.5-25P DCGT 11T302FN-25P	7°	55°	.008	.156	.375	.173	S	S
	DCGT 32.51-25P DCGT 11T304FN-25P	7°	55°	.016	.156	.375	.173	S	S
	DCGT 32.52-25P DCGT 11T308FN-25P	7°	55°	.031	.156	.375	.173	S	S
 <p>25° Positive Rake Chipbreaker</p>	VCGT 220.5-25P VCGT 110302FN-25P	7°	35°	.008	.125	.250	.110	S	LS
	VCGT 221-25P VCGT 110304FN-25P	7°	35°	.016	.125	.250	.110	S	LS
	VCGT 331-25P VCGT 160404FN-25P	7°	35°	.016	.1875	.375	.216	S	S
	VCGT 332-25P VCGT 160408FN-25P	7°	35°	.031	.1875	.375	.216	S	S
<p>Polished High Positive Rake Grade C23J Inserts are Designed for Aluminum, Copper and Plastics Use TiALN Coated Grade 323F for Finishing Most Materials Including Stainless, Titanium &amp; Hardened Steels 45Rc +</p>									
<p>S = Stock Standard      LS = Limited Stock or Non-Stock - Call for Availability</p>									

# TURNING INSERTS

Style:	Insert	Dimensions						Grades				
ANSI - ISO Standards	Description	L	A	R	T	IC	H	C23	C23J	123	323	356
<p>10° Double Positive Rake for Finishing &amp; Light Roughing</p>	CNGP 430K .002	0°	80°	.002	.1875	.500	.203	LS	LS	LS	LS	NA
	CNGP 430K	0°	80°	.004	.1875	.500	.203	S	S	S	S	NA
	CNGP 430.5K	0°	80°	.008	.1875	.500	.203	S	S	S	S	NA
	CNGP 431K	0°	80°	.016	.1875	.500	.203	S	S	S	S	NA
	CNGP 432K	0°	80°	.031	.1875	.500	.203	S	S	S	S	NA
	CNGP 433K	0°	80°	.047	.1875	.500	.203	S	S	S	S	NA
<p>10° Positive Rake for Titanium &amp; High Temperature Alloys</p>	CNGG 430	0°	80°	.004	.1875	.500	.203	S	S	S	S	NA
	CNGG 430.5	0°	80°	.008	.1875	.500	.203	S	S	S	S	NA
	CNGG 431	0°	80°	.016	.1875	.500	.203	S	S	S	S	NA
	CNGG 432	0°	80°	.031	.1875	.500	.203	S	S	S	S	NA
	CNGG 433	0°	80°	.047	.1875	.500	.203	S	S	S	S	NA
<p>2 Sided Insert for Finishing and Light Roughing</p>	DNGP 430 K	0°	55°	.004	.1875	.500	.203	S	S	S	S	NA
	DNGP 430.5 K	0°	55°	.008	.1875	.500	.203	S	S	S	S	NA
	DNGP 431 K	0°	55°	.016	.1875	.500	.203	S	S	S	S	NA
	DNGP 432 K	0°	55°	.031	.1875	.500	.203	S	S	S	S	NA
	DNGP 433 K	0°	55°	.047	.1875	.500	.203	S	S	S	S	NA
<p>2 Sided Light Finishing Insert</p>	VNGP 330 K	0°	35°	.004	.1875	.375	.150	NA	S	S	S	NA
	VNGP 330.5 K	0°	35°	.008	.1875	.375	.150	NA	S	S	S	NA
	VNGP 331 K	0°	35°	.016	.1875	.375	.150	NA	S	S	S	NA
<p>2 Sided General Purpose Insert</p>	VNGP 330 D	0°	35°	.004	.1875	.375	.150	S	S	S	S	NA
	VNGP 330.5 D	0°	35°	.008	.1875	.375	.150	S	S	S	S	LS
	VNGP 331 D	0°	35°	.016	.1875	.375	.150	S	S	S	S	S
	VNGP 332 D	0°	35°	.031	.1875	.375	.150	S	S	S	S	NA
<p>10° Double Positive Rake for Finishing &amp; Light Roughing</p>	WNGP 430 K	0°	80°	.004	.1875	.500	.203	S	S	S	S	NA
	WNGP 430.5 K	0°	80°	.008	.1875	.500	.203	S	S	S	S	NA
	WNGP 431 K	0°	80°	.016	.1875	.500	.203	S	S	S	S	NA
	WNGP 432 K	0°	80°	.031	.1875	.500	.203	S	S	S	S	S

S = Stock Standard

LS = Limited Stock or Non-Stock - Call for Availability

Style:	Insert	Dimensions					Grades			
Flat Top - No Chipbreaker	Description	A	R	T	IC	H	C23	123	323	623
 <p>For Hard Turning</p>	<b>CNMA 432</b>	80°	.031	.1875	.500	.203	LS	LS	LS	S
	<b>CNMA 433</b>	80°	.047	.1875	.500	.203	LS	LS	LS	S
	CVD Aluminum Oxide Coated Grade 623 for Turning Hard Materials Over 50Rc Run at 100 SFM, .005 to .020 Depth of Cut and Feed Rate under .005									
Style:	Insert	Dimensions					Grades			
ANSI - ISO Standards	Description	A	R	T	IC	H	C23	123	323	323F
 <p>Bumpy Style Chipbreaker</p>	<b>CNMG 432GP</b>	80°	.031	.1875	.500	.203	LS	LS	S	LS
	For Light Roughing 300 Series Stainless, 15-5PH, 17-4PH, A286 and other Tough To Machine Alloys at Moderate Feeds & Speeds									
 <p>10° Positive Rake Chipbreaker</p>	<b>CNMG 432HT</b>	80°	.031	.1875	.500	.203	LS	LS	S	LS
	For Light Roughing in Titanium, Inconel ® and other High Temperature Alloys HT Style Chipbreakers Provide Chip Control in Tough, Gummy Materials									
 <p>10° Positive Rake Chipbreaker</p>	<b>DNMG 431HT</b>	55°	.016	.1875	.500	.203	LS	LS	S	LS
	<b>DNMG 432HT</b>	55°	.031	.1875	.500	.203	LS	LS	S	LS
For Light Roughing in Titanium, Inconel ® and other High Temperature Alloys HT Style Chipbreakers Provide Chip Control in Tough, Gummy Materials										
 <p>10° Positive Rake Chipbreaker</p>	<b>VNMG 331HT</b>	35°	.016	.1875	.375	.150	LS	LS	S	LS
	<b>VNMG 332HT</b>	35°	.031	.1875	.375	.150	LS	LS	S	LS
For Light Roughing in Titanium, Inconel ® and other High Temperature Alloys HT Style Chipbreakers Provide Chip Control in Tough, Gummy Materials										
 <p>Bumpy Style Chipbreaker</p>	<b>WNMG 432GP</b>	80°	.016	.1875	.500	.203	LS	LS	S	LS
	For Light Roughing 300 Series Stainless, 15-5PH, 17-4PH, A286 and other Tough To Machine Alloys at Moderate Feeds & Speeds									

S = Stock Standard

LS = Limited Stock or Non-Stock - Call for Availability