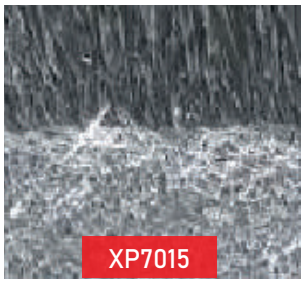
TURNING

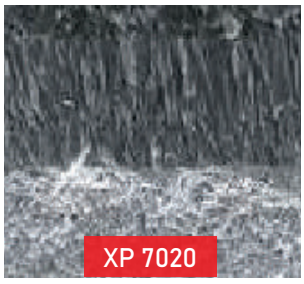
www.xcut.in

GRADE INFORMATION



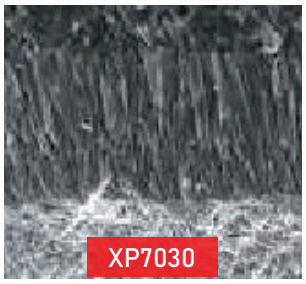
P05-P20

Special layer of TiC (N) coating to increase the temperature resistance of the insert.
Using special grade sintering technology to increase the wear resistance and balance the hardness of the insert.
Extremely effective for mild and Alloy Steels.
Special carbide grade developed to sustain wear resistance.
Helps the insert to perform at high speeds in unstable conditions.



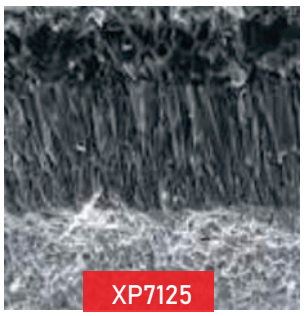
P10-P25

TIALN over TiCN layer with antiwear material abrassion performance lead to the best wear resistance of the face of clearance angle.
Using gradient sintering technology, we increase the impact resistance of insert, so as to improve the ability to resist damage of the insert.
First choice for bearing and preturned/soft automotive steels at high parameters.



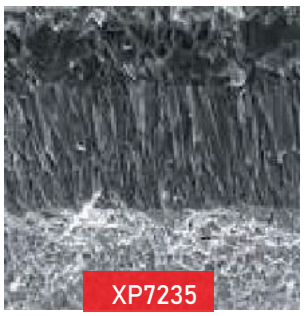
P15-P35

Special structure of Al2O3 settled layer has the best thermal barrier performance, high speed dry cutting, ensure resistance to plastic deformation.
Special layer with antiwear material leads to the best wear resistance of the face of clearance angle.
Special sintering technology, improves the wear resistance of the insert.
First choice for Automotive steels, EN materials and cold forged applications of 16MnCr5 & 20 MnCr5.



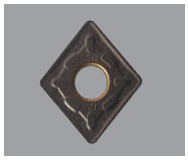
P10-P30 | K10-K20

Special structure of Al2O3 settled layer has the best thermal barrier performance, high speed dry cutting, ensuring resistance to plastic deformation.
TiCN layer with anti wear material abrassion performance lead to the best wear resistance of the face of clearance angle.
Carbide with special structure improves the hardness & strengthened the high temperature resistance performance of insert.
First choice for general and production steel applications with higher feeds and dry machining.

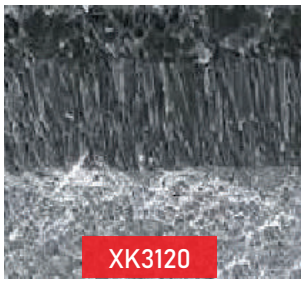


P20-P40

Special structure of Al2O3 settled layer along with TiCN coating which has the best thermal barrier performance, high speed dry cutting, ensure resistance to plastic deformation along with added stability.
TiCN layer with antiwear material abrassion performance lead to the best wear resistant of the face of clearance angle.
Using gradient sintering technology, and increase the impact resistance & wear resistance of insert, so as to improve the ability to resist damage of the insert.
Best suited for heavy roughing and interrupted applications at high feeds in unstable conditions.

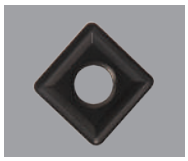


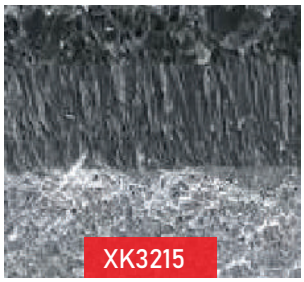
GRADE INFORMATION



K10-K20

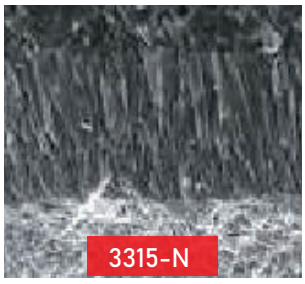
Special Substrate designed for the perfect combination of Wear & Impact resistance.
This special material combined with Al2O3 coating enables high performance at high speed against any competitor





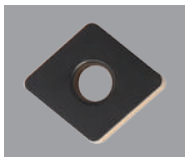
K10-K20 | P05-P15

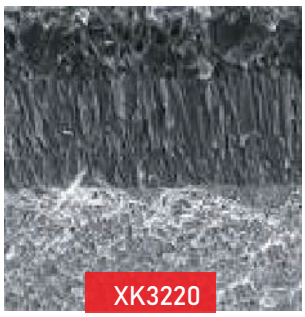
Thick Al2O3 MT-CVD coating combined with strong impact resistance matrix keeps the insert stable at high temperature.
TiCN layer with antiwear material abrasion performance lead to the best wear resistant of the face of clearance angle.
High wear resistance substrate provides added stability to machine Gray & SG Iron.
Can also be used to machine steel at high cutting speed in continuous cuts.



K10-K25

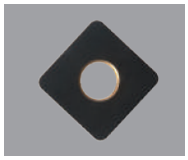
Special structure of Al2O3 settled layer has the best thermal barrier performance, high speed dry cutting, ensure resistance to plastic deformation.
Special layer with antiwear material leads to the best wear resistance of the face of clearance angle.
Special sintering technology, improves the wear resistance of the insert.
Carbide with special crystalline structure improves the temperature resistant performance of insert.



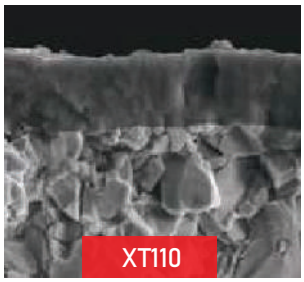


K15-K30

Thick Al2O3 over TiCN coating combined with strong impact resistance matrix keeps the insert stable at high temperature.
TiCN layer with anitwear material abrasion performance lead to the best wear resistant of the face of clearance angle.
High wear resistance substrate provides added stability to machine Gray & Ductile Cast Iron.

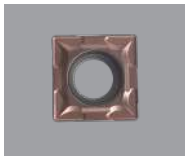


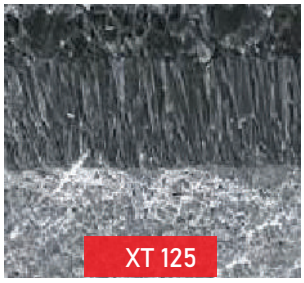
GRADE INFORMATION



P10-P25 | M05-M15 | K10-K25

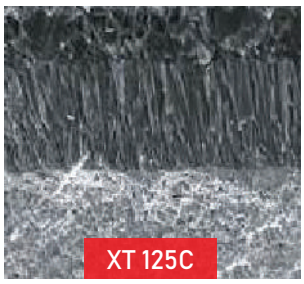
Special coating designed to be able to cater most materials under different machining environments.
Enhanced performance under low end machining conditions.
Substrate and PVD coating designed to improve strength & wear resistance





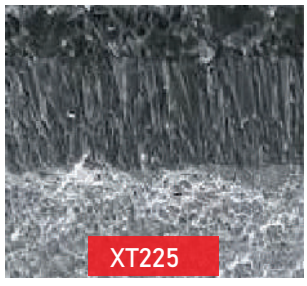
P10-P30 | M10-M25 | K10-K20

2-4 µ ALCrN+AlCrSiN PVD Coated, Combinating with fine particles substrates with High-Toughness, suitable for all materials in light & medium load turning, stainless steel & high-Temperature hardness alloy in finishing, semi-finishing.



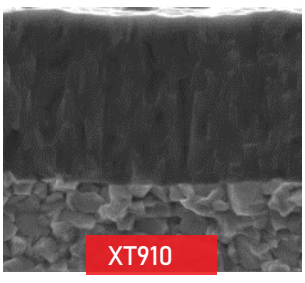
P15-P30 | M15-M30

High adhesion strength to the substrate improves stable tool life.
Due to the excellent heat resistance and oxidation resistance, the XT125-C prevents a failure of tool life even when machining hardened work piece.
Due to the cemented carbide with high wear resistance and fracture resistance, the XT125-C provides stable machining operation.



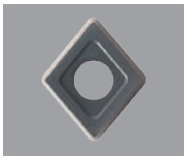
P15-P30 | M15-M30 | S05-S15

2-4 µ ALCrN+AlCrSIN PVD Coated, Combinating with ultra fine Co particles substrates with High-Toughness.
Suitable for all materials in light & medium load turning.
Suitable stainless steel & high-Temprature hardness alloy in finishing, semi finishing.

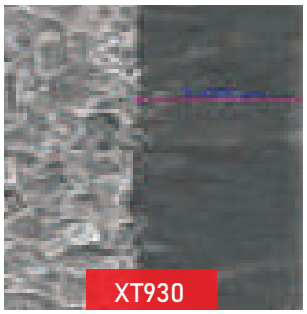


P15-P30 | M10-M20 | K10-K30

Universal Grade for mild cutting conditions
Recommended for mild steel, and cast iron boring application
Harder substrate and special PVD coating for excellent wear resistance

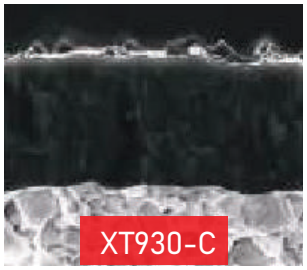


GRADE INFORMATION



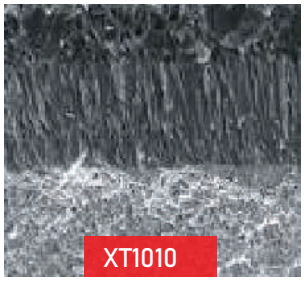
P15-P30 | M15-M30 | S05-S15

Ultra-fine grain matrix, nano-multilayer coating of AlTiMeN with good wear resistance and oxidation resistance.
Stable, long-life turning of steel and stainless steel.
Can also work on softer super alloys.



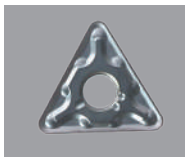
P15-P35 | M15-M35 | H05-H15

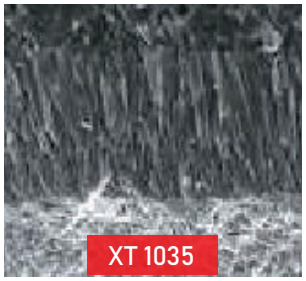
Ultra find grade with Nano coating for high heat resistance and toughness. Special AITIMEN coating gives it a bronze shade and higher temperature resistance! The first choice for general-purpose machining of stainless steel. It can be used for supplementary machining of soft steels.



M10-M25 | S05-S20 | H05-H15

The ultra-fine grain matrix strengthened by the bonding phase has excellent heat resistance and wear resistance.
The Special TiAlN nano-coating helps prevent chipping off.
It is extremely suited for finishing/semi-finishing turning of heat-resistant alloys and hardened materials, and general-purpose milling.

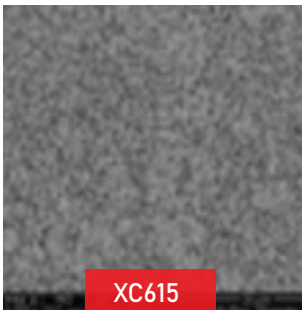




M20-M35 | S15-S35

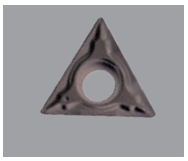
Excellent high-temperature wear resistance and toughness with nano multilayer coating applied.
High lubrication nano coating prevents rapid wear of cutting edges.
Best suited for machining tough stainless steels, inconels and superalloys in difficult conditions.

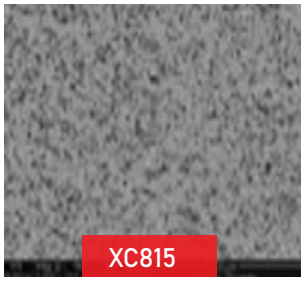
GRADE INFORMATION



P05-P20 | K05-K20

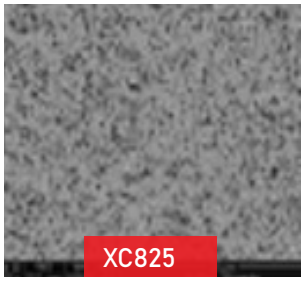
High hardness, good strength and toughness, Fine and uniform hard phase organization, can be processed into a very sharp edge, good wear resistance, not easy to wear during use.
It is suitable for high-speed finishing and semi-finishing of carbon steel, alloy steel, cast iron and stainless steel materials within 45HRC hardness, and the surface of the machined workpiece can reach the mirror surface.





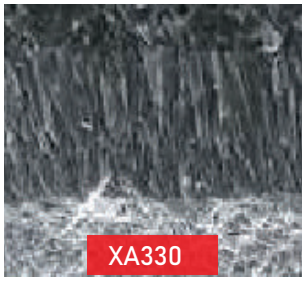
P05-P30 | K05-K30

XC815 is AlCrN Coating, enabling good strength and toughness, moderate hardness, high temperature red hardness and chemical stability, but also has good impact resistance, can be applied to part of the intermitttent processing conditions.
It is suitable for Finishing and semi-Finishing of carbon steel, low alloy steel, cast iron and bearing steel with hardness less than 40HRC, especially for high-speed cutting and large margin machining.



P05-P30 | K05-K30

High hardness, good strength and toughness, Fine and uniform hard phase organization, can be processed into a very sharp edge, good wear resistance, not easy to wear during use.
TiCN layer with antiwear material abrassion performance lead to the best wear resistant of the face of clearance angle.

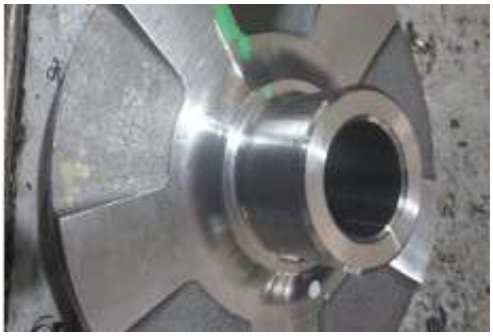


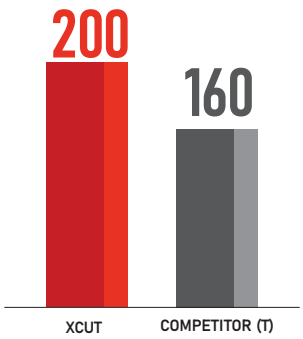
N10-N20 (Si<13%)

Polished rake surface for smoother flow of chips.
Positive & sharp cutting edge for enhanced tooling performance.
Excellent machining & chip flow, reduced built-up edge

CASE STUDIES

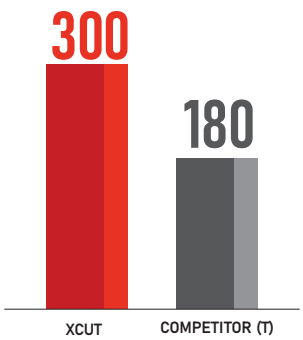
XP7235		
PRODUCT DESCRIPTION	CNMG120416GM-XP7235	
MATERIAL & HARDNESS	Forged steel (25-30 HRC)	
PARAMETERS	COMPETITOR (T)	XCUT
Depth of Cut	3mm	3mm
Vc: m/min	320	270
Fz: mm./tooth	0.35	0.42
Life Increased by 25%		





TOOL LIFE (NO. OF COMPONENTS)

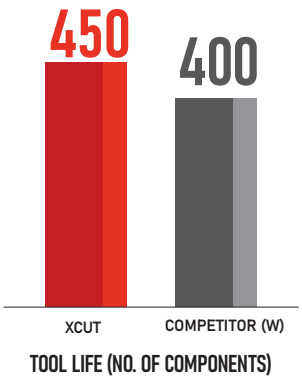
XT1010		
PRODUCT DESCRIPTION	TNMG160408SM-XT1010	
MATERIAL & HARDNESS	HARDENED STEEL & 60HRC	
PARAMETERS	COMPETITOR (T)	XCUT
Depth of Cut	0.2mm	0.2mm
Vc: m/min	70	70
Fz: mm./tooth	0.11	0.12
Life Increased by 60%		



TOOL LIFE (NO. OF COMPONENTS)

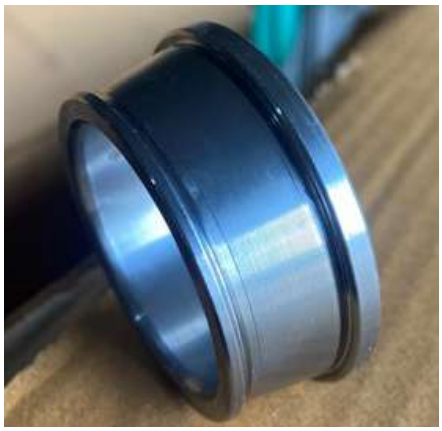
CASE STUDIES

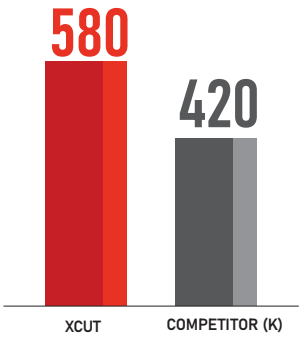
XT930-C		
PRODUCT DESCRIPTION	CNMG120412CR-XT930-C	
MATERIAL & HARDNESS	20MNCR5- (CROWN WHEEL AND PINION)	
PARAMETERS	COMPETITOR (W)	XCUT
Depth of Cut	1.5mm	1.5mm
Vc: m/min	200	220
Fz: mm./tooth	0.22	0.25
Life Increased by 11%		



TOOL LIFE (NO. OF COMPONENTS)

ISP-XP7020		
PRODUCT DESCRIPTION	TNMG 160412 ISP XP7020	
MATERIAL & HARDNESS	BEARING STEEL 52100	
PARAMETERS	COMPETITOR (K)	XCUT
Depth of Cut	2mm	2mm
Vc: m/min	300	300
Fz: mm./tooth	0.28	0.28
Tool Life Increased by 38%		





TOOL LIFE (NO. OF COMPONENTS)

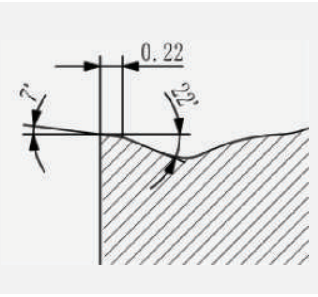
GRADE CHART

MATERIAL	C.V.D					PVD						CERMET	UNC
P05	XP7015											XC615/XC815/XC825	XA330
P10		XP7020		XP7125			XT110	XT125					
P15			XP7030						XT910	XT930/ XT930-C			
P20					XP7235								
P25													
P30													
P35													
P40													
M05							XT110						
M10						XT1010		XT125		XT910			
M15									XT225/ XT930		XT930-C		
M20							XT1035						
M25													
M30													
M35													
M40													
K05												XC615/XC815/XC825	
K10	XK3120	XK3215	XK3315-N				XT110	XT125		XT910			
K15				XK3220					XT125-C				
K20													
K25													
K30													
S05						XT1010			XT225/ XT930	XT930-C			
S10													
S15							XT1035						
S20													
S25													
S30													
S35													
H10													
H10						XT1010							
H15													
H20													
H25													
N10													
N20													

APPLICABLE CHIPBREAKERS

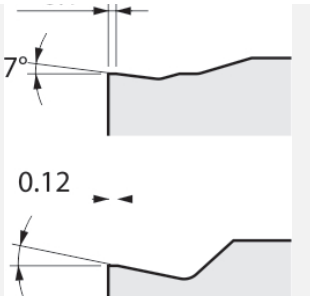
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

CR



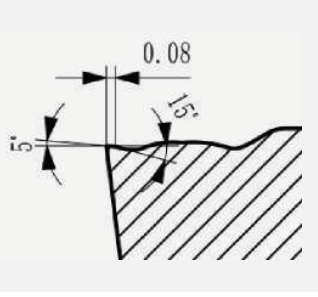
- General Purpose chip-breaker, recommended mainly for Semi Finishing
- Provides excellent cutting edge sharpness due to the positive land geometry.
- Works extremely well for Steel and Stainless Steel applications.

CQ



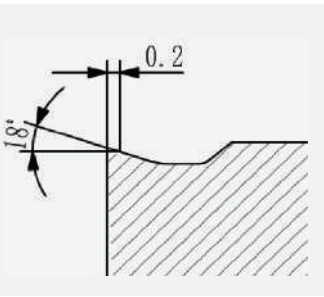
- Semi Finishing chipbreaker
- Good chip control for varied as such as copying
- Very suitable for face turning

GF



- The double positive rake angle design ensures the sharpness of the insert and low cutting resistance.
- The double chip breaker design broadens the chip breaking range.
- Suitable for finishing of steel, stainless steel and cast iron

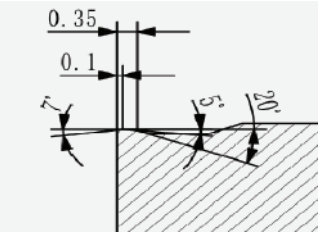
GM



- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel. stainless steel and cast iron.

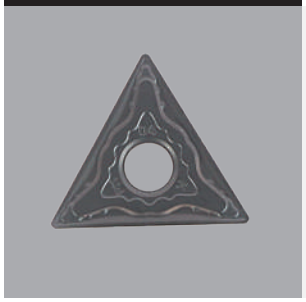
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

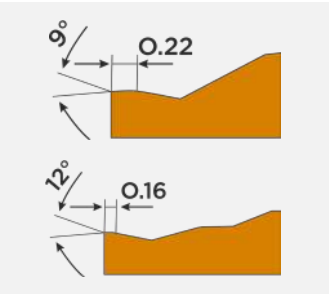
GR



- Negative chamfer design, suitable for large depth of cut and larger feed parameters, to obtain high edge strength and high metal removal rate.
- Effective for heavy interruptions as well

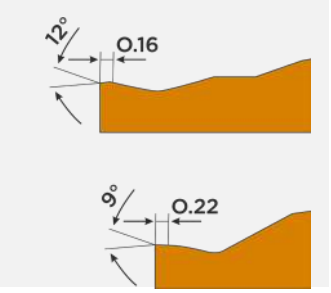
PK





- Double sided chipbreaker combining sharpness with strength
- Suitable for ID roughing and OD semi finishing of steel, stainless steel

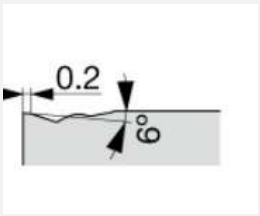
TM



- Preferred chip-breaker for semi-finishing machining of steel to ensure efficient and stable processing.
- Universal chip-breaker with a wide chip-breaking effect and high versatility designed near the tip of the tool, featuring a distinctive shape bulge and front angle.
- This allows the chip-breaker to maintain sharp cutting performance and low cutting force

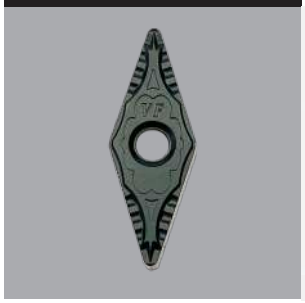
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

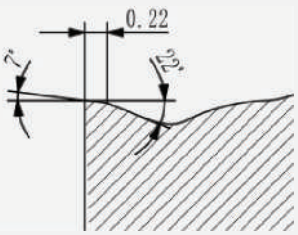
PR



- Strong chip breaking ability , highly suitable for roughing processing of different steels .
- Can take Ap upto 3mm depending on the insert.

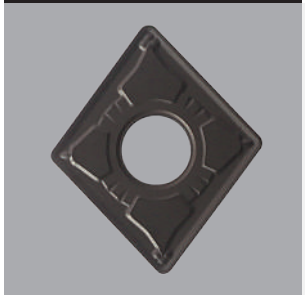
VF

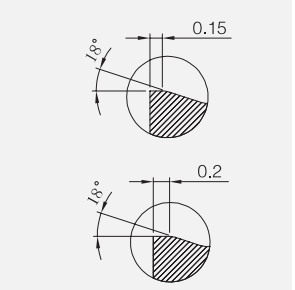




- Good chip control for varied Ap such as copying and undercutting
- Extremely suitable for ball pin turning

XM

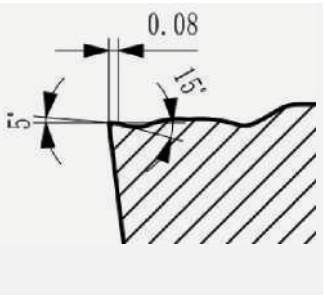




- Medium processing groove type, suitable for steel, forged steel, -EN Series.
- Wide edge and wide chip flute design, high edge strength, good cutting performance, can be used for high feed cutting under unstable conditions.

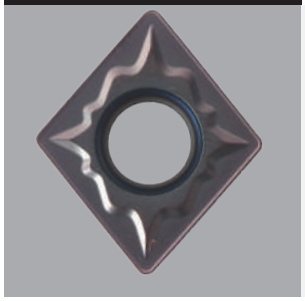
CHIPBREAKERS FOR POSITIVE INSERTS (CVD-STEEL)

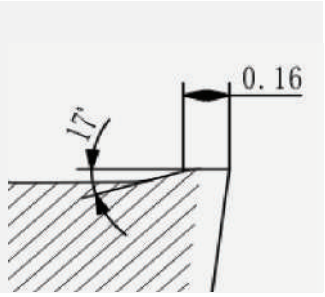
GF



- The double positive rake angle design ensures the sharpness of the insert and low cutting resistance.
- The double chip breaker design broadens the chip breaking range.
- Suitable for finishing of steel, stainless steel and cast iron

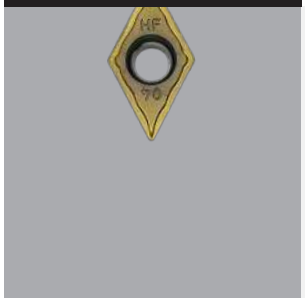
GM

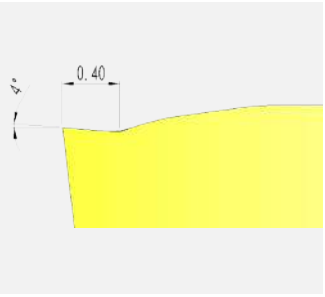




- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi - finishing of steel stainless steel and cast iron.

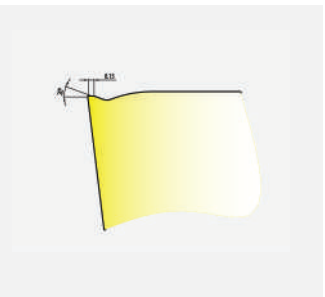
HF





- Chipbreaker for finishing with wide application With M-level tolerance inserts,
- It is suitable for internal and external finishing of various materials such as steel, stainless steel and cast iron.

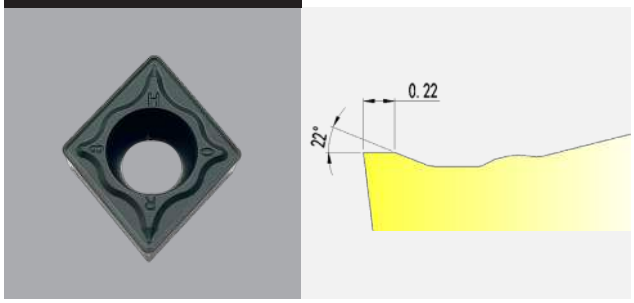
HM



- Chipbreaker for semi-finishing with wide application of positive inserts with M-level tolerance,
- It is suitable for internal and external semi - finishing of materials like steel, stainless steel, cast iron, etc

CHIPBREAKERS FOR POSITIVE INSERTS (CVD-STEEL)

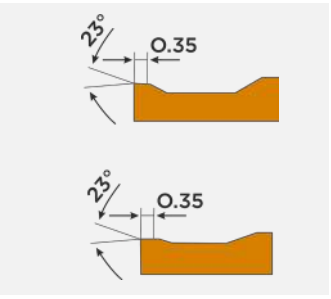
HR



- General chipbreaker for positive inserts for roughing with M-level tolerance,
- It is suitable for both internal and external roughing of materials such as steel, stainless steel, cast iron, etc.

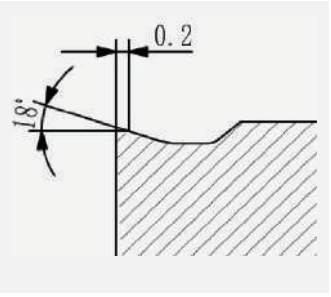
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-CAST IRON)

GH



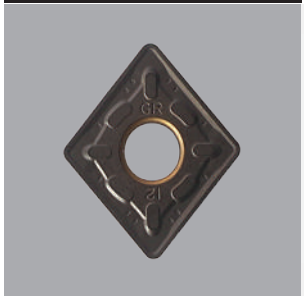
- K type double sided chipbreaker, ensures lighter load on heavy roughing,
- Can achieve both high level metal removal rate and good life on interrupted cutting of Cast Irons also

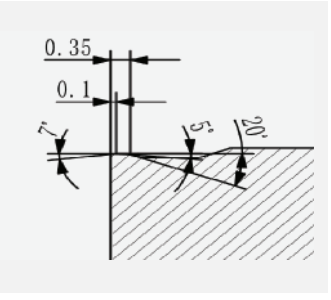
GM



- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel stainless steel and cast iron.

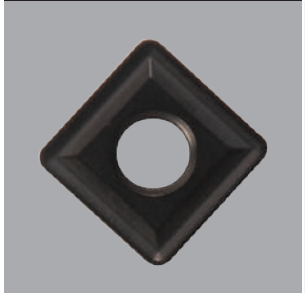
GR

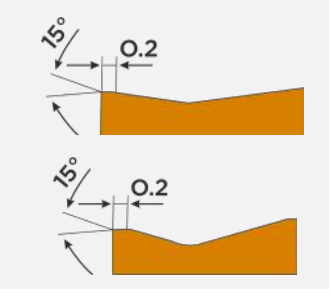




- Negative chamfer design, suitable for large depth of cut and larger feed parameters, to obtain high edge strength and high metal removal rate.
- Effective for heavy interruptions as well

UC

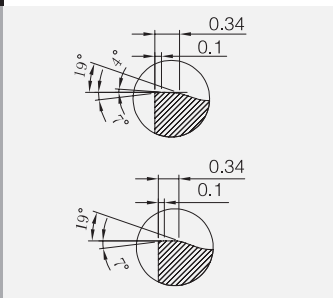




- Double Sided Chipbreaker, good edge strength,
- Recommended for semi finishing of Grey and Ductile Cast Iron

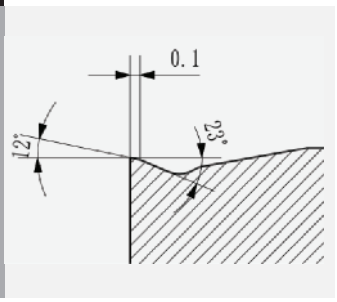
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

AR



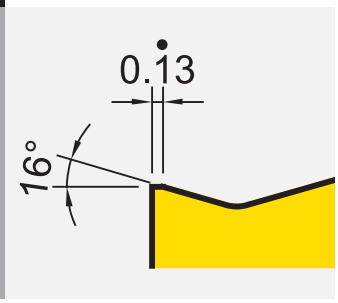
- The cutting edge has high strength and performs a long service life in roughing and harsh working.

BF



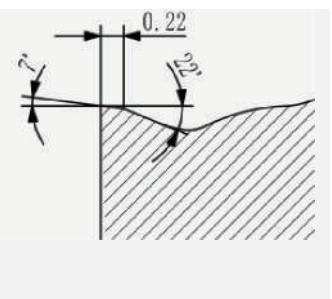
- M-level double-sided chipbreaker, small edge width + double positive rake angle, sharp blade edge.
- Low cutting resistance, special edge inclination design, can obtain high-quality machined surface.

BM



- M-level double-sided chipbreaker, double positive rake angle.
- Higher edge strength than BF.
- Widely application for the general processing of stainless steel.

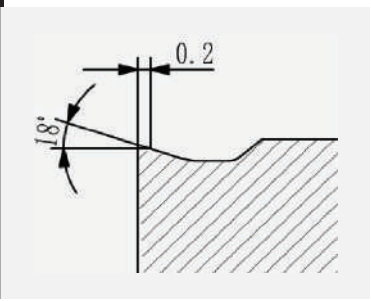
CR



- General Purpose chip-breaker; recommended mainly for Semi - Finishing
- Provides excellent cutting edge sharpness due to the positive land geometry.
- Works extremely well for Steel and Stainless Steel applications.

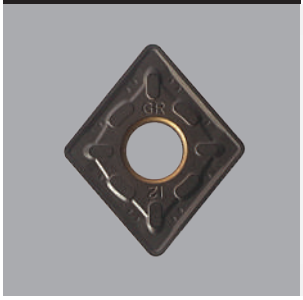
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

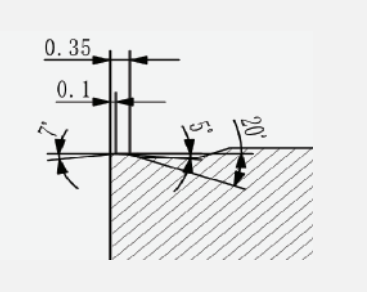
GM



- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel stainless steel and cast iron.

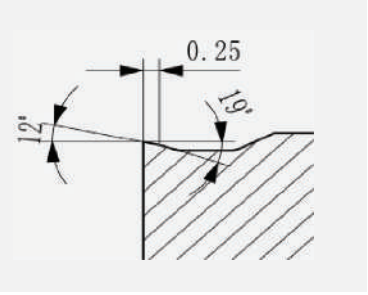
GR





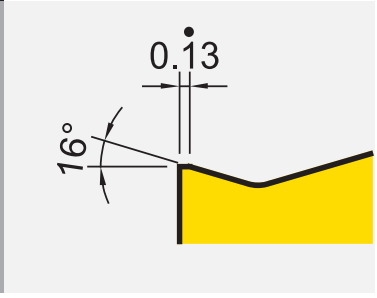
- Negative chamfer design, suitable for large depth of cut and larger feed
  parameters, to obtain high edge strength and high metal removal rate.
- Effective for heavy interruptions as well.

MS



- Superior cutting edge sharpness and strength achieved by a large positive land
- Extra strength of cutting edge inhibits damage from chipping and improves impact resistance

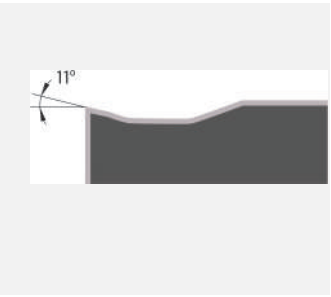
NN



- All purpose chipbreaker with combination of sharpness andstrength suitable for semi finish, especially on difficult to cut materials

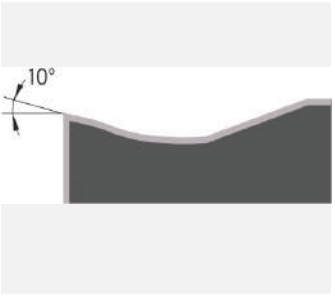
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

NM



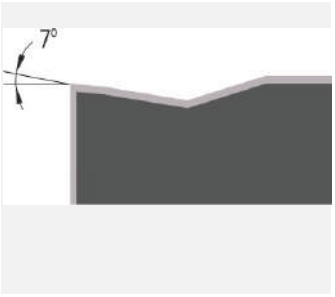
- Shape designed for stable chip processing
- Optimised chipbreaker for ISO S, M machining
- Sharp edges prevents welding
- Variable land helps in delaying crater wear

NR



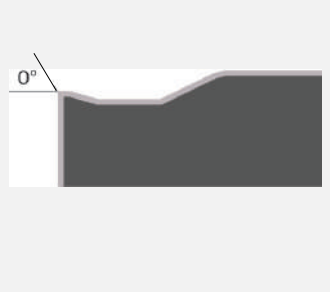
- Optimised geometry for S Series semi roughing
- Applies sharp cutting edge to reduce the load and ensure good finish
- Stable processing possible with wide land

NR1



- Designed for heavy roughing of S, M type materials
- Reinforced edge helps for managing high load
- Large land ensures in stable machining and avoiding early chip off

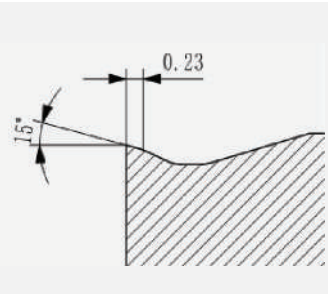
NR2



- Chipbreaker for roughing of larger inserts
- Wide chip pocket enables high speed roughing
- High DoC possible due to reinforced cutting edge

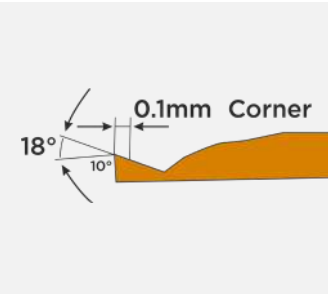
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

SM



- M-level double-sided chipbreaker.
- Adopting the double positive rake angle combines the sharpness and strength of the insert.
- The cutting resistance is small, and the wider chipbreaker ensures enough space for chip deformation, reducing groove wear.

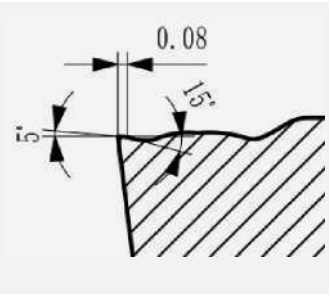
XS



- Single sided chipbreaker
- Mainly for general use in semi finishing of Steel, Stainless Steel and Cast Iron

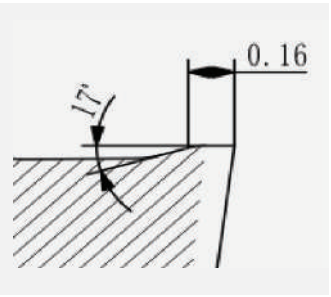
CHIPBREAKERS FOR POSITIVE INSERTS (MULTI-GRADE PVD)

GF



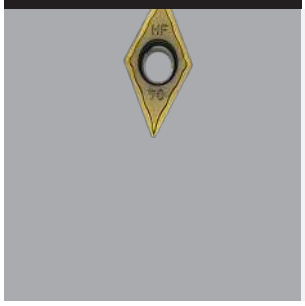
- The double positive rake angle design ensures the sharpness of the insert and low cutting resistance.
- The double chip breaker design broadens the chip breaking range.
- Suitable for finishing of steel, stainless steel and cast iron

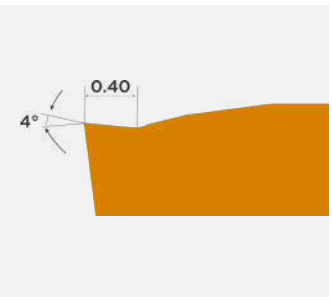
GM



- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel stainless steel and cast iron.

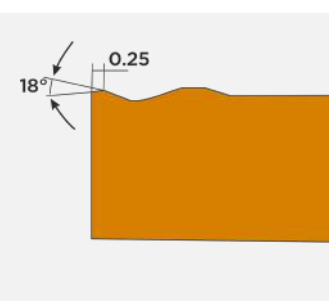
HF





- Chipbreaker for finishing with wide application with M-level tolerance inserts, it is suitable for internal and external finishing of various materials such as steel, stainless steel and cast iron.

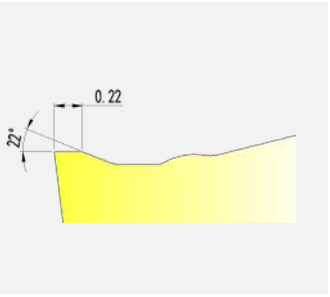
HM



- Chipbreaker for semi-finishing with wide application of positive inserts with M-level tolerance,
- It is suitable for internal and external semi - finishing of materials like steel, stainless steel, cast iron, etc

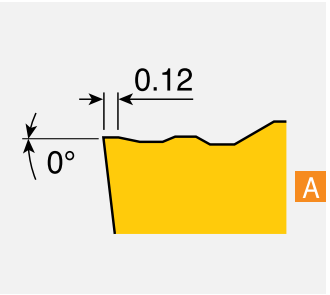
CHIPBREAKERS FOR POSITIVE INSERTS (MULTI-GRADE PVD)

HR



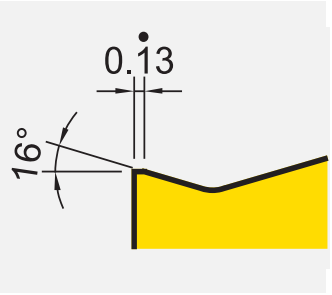
- General chipbreaker for positive inserts for roughing with M-level tolerance,
- It is suitable for both internal and external roughing of materials such as steel, stainless steel, cast iron, etc.

MT



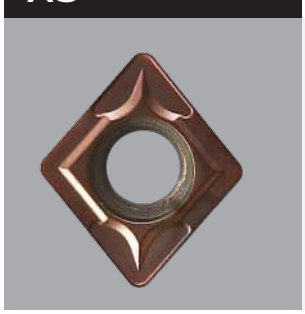
- Negative rake geometry for general use
- For medium to medium rough applications of Steel, stainless steel and cast iron machining

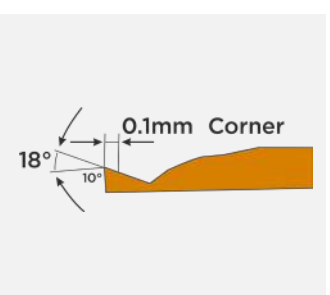
NN



- All purpose chipbreaker with combination of sharpness and strength suitable for semi finish, especially on difficult to cut materials

XS

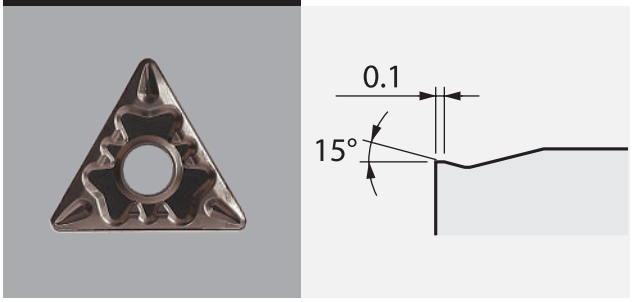




- Single sided chipbreaker
- Mainly for general use in semi finishing of Steel, Stainless Steel and Cast Iron

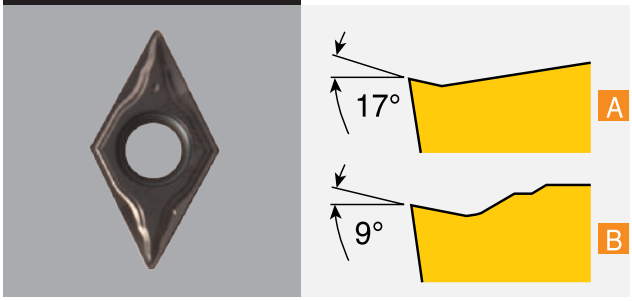
CHIPBREAKERS FOR CERMET INSERTS

FQ



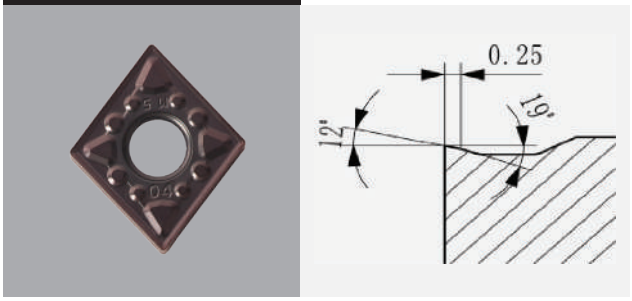
- Used for semi finish to finish applications
- Double sided chipbreaker with bulged rake angle enables sharp cutting

FG



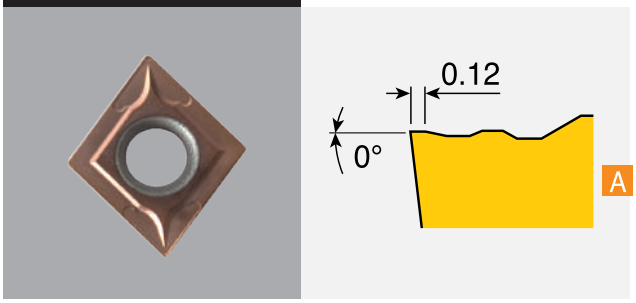
- Used mainly for finishing
- Low cutting forces
- Excellent chip control
- For finish and semi finish applications for Steel, stainless steel and cast iron machining

MS



- Superior cutting edge sharpness and strength achieved by a large positive land
- Extra strength of cutting edge inhibits damage from chipping and improves impact resistance

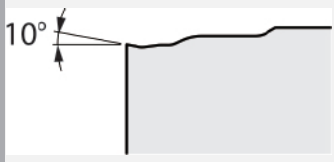
MT



- Negative rake geometry for general use
- For medium to medium rough applications of Steel, stainless steel and cast iron machining

CHIPBREAKERS FOR CERMET INSERTS

PP



- 3 step dot structure realizes stables chip control at a wide range of feed rate.
- Less cutting forced due to sharp cutting.

Turning Insert Identification System

Symbol	Shape
H	Hexagon
O	Octagon
P	Pentagon
S	Square
T	Triangle
C	80° Rhombic
D	55° Rhombic
E	75° Rhombic
F	50° Rhombic
M	86° Rhombic
V	35° Rhombic
W	Hexagon
L	Rectangle
A	85° Parallelogram
B	82° Parallelogram
K	55° Parallelogram
R	Round

Shown angle stand for acute angle for rhombic and parallelogram inserts.

(1) Shape Symbol

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

(2) Relief Angle Symbol

Symbol (class)	Tolerance(mm)		
	Corner Height	Thickness	I.C. Size
A	± 0.05	±0.025	±0.025
F			±0.013
C	± 0.013		±0.025
H			±0.013
E	± 0.025		±0.025
G		± 0.13	
J	± 0.005	±0.025	±0.05~ ±0.15
K*	± 0.013		
L*	± 0.025		
M*	± 0.08~ ± 0.18	±0.13	
M*		±0.025	
U*	± 0.13~ ± 0.38	±0.13	±0.08~ ±0.25

*Insert's Periphery is as fired
Tolerances differences is depending on insert size

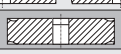
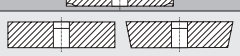
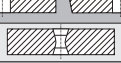
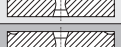
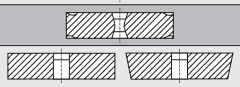
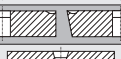
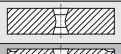
(3) Tolerance Symbol

ISO (METRIC)

C	N	M	G
(1)	(2)	(3)	(4)

(5) Edge Length Symbol (ISO)							I.C. Size (mm)
C	D	R	S	T	V	W	
03	04		03	06			3.97
04	05		04	08	08		4.76
		05					5
05	06		05	09		03	5.56
		06					6
06	07		06	11	11	04	6.35
08	09		07	13		05	7.94
		08					8
09	11	09	09	16	16	06	9.525
	12	10					10
		12					12
12	15	12	12	22	22	08	12.7
16	19	15	15	27	27	10	15.857
		16					16
19	23	19	19	33	33	13	19.05
		20					20
22	27		22	38			22.225
		25					25
25	31	25	25	44	44	17	25.4
32	38	21	21	54	54	21	31.75
		32					32

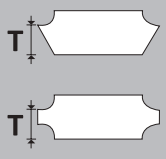
·Expressed as edge length for ISO.
·ANSI expresses the inscribed circle diameter in inches

Symbol (class)	Hole	Hole Shape	Insert Chipbreaker	Shape
N	NO		No	
R			One Sides	
F			Two Sides	
A	YES	White Hole	No	
M			One Sides	
G			Two Sides	
W		With Hole and One Countersink 40°-60°	No	
T			One Sides	
Q		With Hole and Two Countersink 40°-60°	No	
U			Two Sides	
B		With Hole and One Countersink 70°-90°	No	
H			One Sides	
C		With Hole and Two Countersink 70°-90°	No	
J			Two Sides	
X	-	-		
(4) How/ Chipbreaker Symbol				

12	04	08	GM
(5)	(6)	(7)	(8)

(6) Thickness Symbol

ISO	
Thickness (mm)	Symbol
1.59	01
1.98	T1
2.38	T2
3.18	03
3.97	T3
4.76	04
5.56	05
6.35	06
7.94	07
9.525	09



Thickness displayed as the distance between bottom surface & highest point on cutting edge.

(7) Corner-R() Symbol

ISO	
Corner-R(mm)	Symbol
Sharp Corner	00
0.03	003
0.05	005
0.1	01
0.2	02
0.4	04
0.8	08
1.2	12
1.6	16
2.0	20
2.4	24
2.8	28
3.2	32
Round insert	00 (inch) or M0 (metric)

(8) Manufacture's Option

Hans Symbol Chipbreaker Symbol, etc.

CCMT 06

POSITIVE 7°
CLEARANCE 80°
RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
06	6.35	2.38	0.2-0.8
09	9.52	3.97	0.2-0.8
12	12.7	3.97	0.4-.12

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
CCGT	060202		0.13-0.30	1.3-5.0																					●
CCMT	060202	FG	0.05-0.15	0.2-1.5	●	○																				
	060202	FQ	0.05-0.13	0.2-1.5	●		○																			
	060202	GF	0.05-0.13	0.2-1.5																		○	●	○		
	060202	HF	0.05-0.15	0.2-1.5														●		○						
	060202	PP	0.05-0.15	0.2-1.5	●		○																			
CCGT	060204		0.13-0.30	1.3-5.0																					●
CCMT	060204	FG	0.05-0.15	0.2-1.5	●	●	○																			
	060204	FQ	0.05-0.17	0.2-1.5	●	○	●																			
	060204	GF	0.05-0.15	0.2-1.5																		○	●	●		
	060204	GM	0.07-0.17	0.2-2.0														●				○	○	○		
	060204	HF	0.05-0.157	0.2-1.5							●							●		●						
	060204	HM	0.04-0.15	0.2-2.0							●							●		○						
	060204	MT	0.05-0.17	0.2-2.0	●		○												●							
	060204	NN	0.05-0.15	0.3-2.0																	●					
	060204	PK	0.05-0.17	0.2-2.0					●																	
	060204	PP	0.08-0.15	0.2-1.5	●		○																			
	060204	XS	0.05-0.17	0.2-1.5													●									
CCGT	060208		0.13-0.30	1.3-5.0																					●
CCMT	060208	GM	0.13-0.35	0.5-2.5																		○	●	○		
	060208	HM	0.13-0.30	0.7-2.0							●							●		○						
	060208	MT	0.10-0.30	0.7-2.5	●		○												●							
	060208	NN	0.13-0.35	0.5-2.5																	●					
	060208	PK	0.10-0.30	0.5-3.0					●																	
	060208	XS	0.13-0.30	0.7-2.5													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE

CCMT 09

POSITIVE 7°
CLEARANCE 80°
RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
06	6.35	2.38	0.2-0.8
09	9.52	3.97	0.2-0.8
12	12.7	3.97	0.4-.12

Designation		CHIP BREAKER	Feed (mm/ rev)	ap (mm)	Cermet			CVD Coated								PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
CCGT	09T302		0.10-0.25	0.7-2.5																					●
CCMT	09T302	FQ	0.10-0.25	0.7-2.5	●		○																		
	09T302	GF	0.10-0.27	0.7-2.5																		○	●	○	
	09T302	HM	0.10-0.22	0.7-2.0							○							●		○					
CCGT	09T304		0.10-0.25	0.7-3.0																					●
CCMT	09T304		0.10-0.25	0.7-2.5									●			○									
	09T304	FG	0.09-0.25	0.7-2.5	●	●	○																		
	09T304	FQ	0.10-0.27	0.7-2.7	●	○	●																		
	09T304	GF	0.08-0.25	0.7-2.5																		○	●	●	
	09T304	HF	0.08-0.25	0.5-2.5							●							●		○					
	09T304	HM	0.08-0.25	0.7-2.7							●			○				●		●					
	09T304	MT	0.10-0.25	0.5-2.5	●		○												●						
	09T304	NN	0.12-0.25	0.7-2.5																	●				
	09T304	PK	0.10-0.25	0.7-2.5					●																
	09T304	XS	0.08-0.25	0.7-2.5													●								
CCGT	09T308		0.10-0.25	0.7-3.5																					●
CCMT	09T308		0.10-0.25	0.8-3.0									●			○									
	09T308	FG	0.08-0.25	0.8-3.0	●	●	○																		
	09T308	FQ	0.10-0.27	0.8-3.0	●	○	●																		
	09T308	GM	0.10-0.25	0.8-3.5																		○	●	●	
	09T308	HM	0.10-0.30	1.0-3.0							●			○				●		●					
	09T308	MT	0.12-0.27	0.8-3.5	●		○												●						
	09T308	NN	0.08-0.25	0.8-3.0																	●				
	09T308	PK	0.10-0.30	0.9-3.0					●																
	09T308	XS	0.10-0.25	0.8-3.0													●								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE

CCMT 12

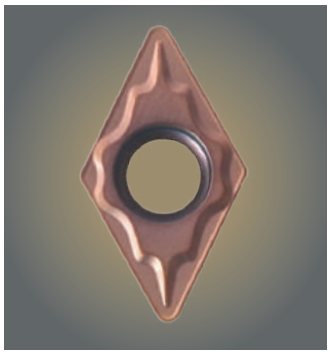
POSITIVE 7°
CLEARANCE 80°
RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
06	6.35	2.38	0.2-0.8
09	9.52	3.97	0.2-0.8
12	12.7	3.97	0.4-.12

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
CCGT	120404		0.13-0.30	1.3-5.0																						●
CCMT	120404	HM	0.10-0.25	1.0-4.5							●			○				●		○						
	120404	GM	0.10-0.27	1.0-4.5																		○	○			
	120404	MT	0.10-0.25	1.0-4.5															●							
	120404	NN	0.08-0.25	1.0-4.5																	●					
	120404	PK	0.10-0.25	1.0-4.5					●																	
	120404	XS	0.08-0.25	1.0-4.0													●									
CCGT	120408		0.13-0.30	1.3-5.0																						●
CCMT	120408	GM	0.10-0.30	1.0-5.0																		●	○			
	120408	HM	0.12-0.30	1.2-5.0							●							●		○						
	120408	HR	0.15-0.30	1.5-5.0							●			○				●		○						
	120408	MT	0.12-0.30	1.0-4.5															●							
	120408	NN	0.12-0.35	1..0-5.0																	●					
	120408	PK	0.12-0.32	1.3-4.5					●																	
	120408	XS	0.08-0.27	1.2-4.5													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



DCMT

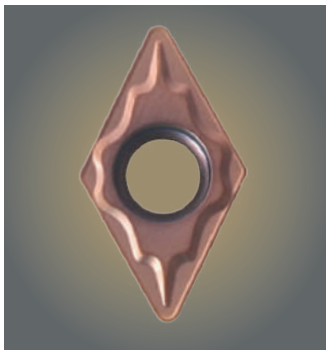
Positive 7° clearance 55° rhombic inserts

Dimensions (mm)			
Size	d	t	r
07	6.35	2.38	0.2-0.8
11	9.52	3.97	0.2-1.2

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
DCGT	070202		0.07-0.20	0.5-1.5																						●
DCMT	070202	FQ	0.05-0.20	0.3-1.5	●		○																			
	070202	HF	0.05-0.20	0.3-1.5														●		○						
DCGT	070204		0.07-0.20	0.4-1.5																						●
DCMT	070204	FG	0.07-0.20	0.3-1.5	●		○																			
	070204	FQ	0.05-0.20	0.3-1.5	●		○																			
	070204	GM	0.06-0.22	0.4-1.5																			●	○		
	070204	HF	0.07-0.20	0.4-1.7														●		○						
	070204	HM	0.07-0.20	0.4-1.7							●			○				●								
	070204	MS	0.07-0.22	0.3-1.5	○																					
	070204	MT	0.06-0.20	0.3-1.8															●							
	070204	NN	0.05-0.20	0.5-2.0																	●					
	070204	PK	0.5-0.20	0.4-1.5					●																	
	070204	XS	0.07-0.20	0.4-1.5													●									
DCGT	070208		0.07-0.23	0.4-1.7																						●
DCMT	070208	FQ	0.07-0.22	0.6-1.5	●		○																			
	070208	GM	0.08-0.20	0.8-1.5																			●	○		
	070208	HM	0.10-0.20	0.8-1.7							●							●		○						
	070208	MT	0.12-0.20	0.7-1.5															●							
	070208	PK	0.10-0.22	0.7-1.5					●																	

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



DCMT

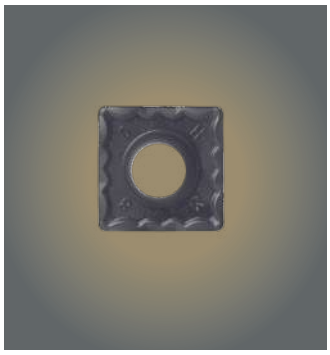
Positive 7° clearance 55° rhombic inserts

Dimensions (mm)			
Size	d	t	r
07	6.35	2.38	0.2-0.8
11	9.52	3.97	0.2-1.2

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated								PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
DCGT	11T302		0.05-0.20	0.5-2.0																					●
DCMT	11T302	FQ	0.07-0.25	0.5-2.2	●		○																		
	11T302	HF	0.05-0.25	0.5-2.2																		○	●	○	
	11T302	HM	0.07-0.22	0.5-2.3							○							●		○					
DCGT	11T304		0.08-0.25	0.5-2.5																					●
DCMT	11T304	FG	0.08-0.25	0.5-2.0	●		○																		
	11T304	GF	0.07-0.22	0.4-2.0																		○	●	○	
	11T304	GM	0.07-0.22	0.5-2.0																			●	○	
	11T304	HF	0.08-0.22	0.5-2.2							●			○				●		○					
	11T304	MT	0.05-0.20	0.4-1.8															●						
	11T304	NN	0.08-0.22	0.5-2.0																	●				
	11T304	PK	0.08-0.20	0.5-2.0					●																
	11T304	XS	0.08-0.20	0.5-2.0													●								
DCGT	11T308		0.10-0.25	0.8-2.5																					●
DCMT	11T308	FG	0.10-0.23	0.8-2.2	●	○	○																		
	11T308	GM	0.08-0.23	0.8-2.2																		○	●	○	
	11T308	HM	0.08-0.25	0.9-2.5							●			○				●		○					
	11T308	MT	0.10-0.23	0.9-2.5															●						
	11T308	NN	0.10-0.25	0.7-2.5																	●				
	11T308	PK	0.10-0.25	0.7-2.5					●																
	11T308	XS	0.10-0.25	0.8-2.5													●								
DCMT	11T312	HM	0.10-0.30	0.8-2.5							○			○				○							

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



SCMT

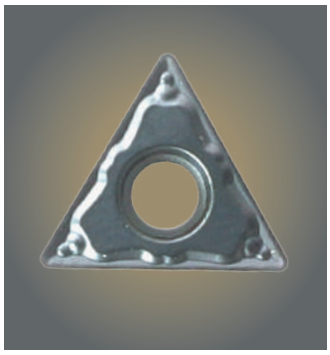
Positive 7° clearance square inserts

Dimensions (mm)			
Size	d	t	r
09	9.52	3.97	0.4-0.8
12	12.7	4.76	0.4-0.8

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
SCGT	09T304		0.08-0.25	0.6-2.5																						●
SCMT	09T304	GM	0.05-0.25	0.5-2.0																		○	●	○		
	09T304	HM	0.05-0.25	0.6-2.0							○			○				●		○						
	09T304	NN	0.08-0.25	0.6-2.0																	●					
	09T304	PK	0.08-0.25	0.6-2.0					●																	
	09T304	XS	0.05-0.25	0.6-2.0													●									
SCGT	09T308		0.10-0.25	0.5-3.0																						●
SCMT	09T308	GM	0.12-0.30	1.0-3.5																		○	●	○		
	09T308	HM	0.12-0.30	1.0-3.0							●			○				●		○						
	09T308	NN	0.15-0.30	1.0-3.5																	●					
	09T308	PK	0.12-0.30	1.0-3.5					●																	
	09T308	XS	0.12-0.30	1.0-3.5													●									
SCGT	120404		0.06-0.25	0.4-2.5																						●
SCMT	120404	GM	0.08-0.25	0.4-3.0																		○	●			
SCGT	120408		0.10-0.30	0.6-0.35																						●
SCMT	120408	GM	0.10-0.35	0.7-4.0																		○	●			
	120408	HM	0.10-0.35	0.7-4.0							●			○				○								
	120408	XS	0.10-0.30	0.7-4.0													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TCMT 09

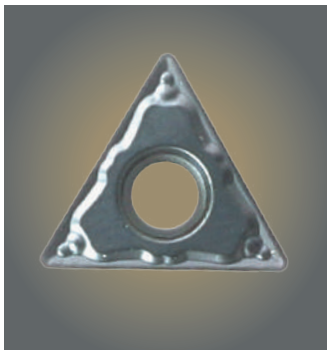
Positive 7° clearance triangular inserts

Dimensions (mm)			
Size	d	t	r
09	5.56	2.38	0.2-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.97	0.4-1.2

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated								PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
TCGT	090202		0.08-0.20	0.2-1.5																					●
TCGT	090204		0.08-0.22	0.3-1.5																					●
TCMT	090204	FQ	0.05-0.20	0.4-2.0	●																				
	090204	HF	0.05-0.20	0.3-1.5							○							●							
	090204	HM	0.08-0.20	0.3-1.5							●			○				○		○					
	090204	PK	0.05-0.20	0.3-2.0					●																
TCGT	090208		0.12-0.30	0.8-2.0																					
																									○
TCMT	090208	HM	0.12-0.30	0.8-2.0							●			○				○							

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TCMT 11

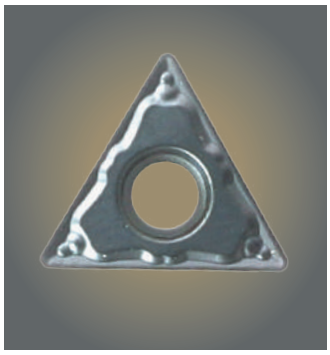
Positive 7° clearance triangular inserts

Dimensions (mm)			
Size	d	t	r
09	5.56	2.38	0.2-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.97	0.4-1.2

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated								PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
TCGT	110202		0.07-0.20	0.3-1.5																					○
TCMT	110202	FQ	0.07-0.20	0.3-1.5	●		○																		
TCGT	110204		0.06-0.20	0.3-2.5																					●
TCMT	110204		0.06-0.20	0.3-2.5									○			○									
	110204	FG	0.06-0.20	0.3-2.5	●		○																		
	110204	FQ	0.05-0.20	0.3-2.5	●		●																		
	110204	GF	0.06-0.20	0.3-2.5																		○	●	○	
	110204	HF	0.05-0.20	0.3-2.5							●			○				○		○					
	110204	MT	0.05-0.20	0.3-2.5															●						
	110204	NN	0.0650.20	0.3-2.5																	●				
	110204	PK	0.06-0.20	0.3-2.5					●																
	110204	PSF	0.06-0.20	0.3-2.5	○		○																		
	110204	XS	0.06-0.20	0.3-2.5													●								
TCGT	110208		0.06-0.20	0.3-2.5																					○
TCMT	110208		0.06-0.20	0.3-2.5									○			○									
	110208	FQ	0.06-0.22	0.5-2.5	●																				
	110208	HM	0.06-0.20	0.5-2.7							●			○				○							
	110208	GM	0.06-0.20	0.5-2.5																		○	●	○	
	110208	MT	0.06-0.20	0.3-2.5															●						
	110208	NN	0.08-0.20	0.5-2.7																	●				
	110208	PK	0.05-0.20	0.5-2.7					●																
	110208	PSF	0.08-0.20	0.5-2.7	○																				
	110208	XS	0.06-0.20	0.3-2.7													●								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TCMT 16

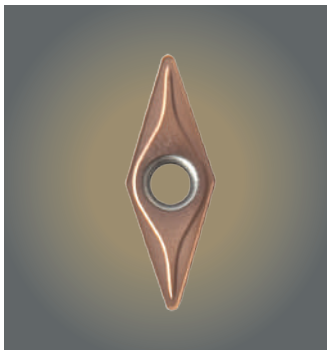
Positive 7° clearance triangular inserts

Dimensions (mm)			
Size	d	t	r
09	5.56	2.38	0.2-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.97	0.4-1.2

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
TCGT	16T304		0.08-0.25	0.35-3.0																						●
TCMT	16T304	FG	0.08-0.25	0.35-3.0	●		○																			
	16T304	FQ	0.08-0.25	0.35-3.0	●		○																			
	16T304	GF	0.08-0.25	0.35-3.0																		○	●	○		
	16T304	HF	0.08-0.25	0.35-3.0							●							○								
	16T304	HM	0.08-0.25	0.35-3.0							●							○		○						
	16T304	MT	0.08-0.25	0.35-3.0															●							
	16T304	NN	0.08-0.25	0.35-3.0																	●					
	16T304	PK	0.08-0.25	0.35-3.0					●																	
	16T304	XS	0.08-0.25	0.35-3.0													●									
TCGT	16T308		0.08-0.25	0.35-3.0																						●
TCMT	16T308		0.10-0.28	0.5-3.0									●			●										
	16T308	FG	0.10-0.28	0.5-3.0	●		○																			
	16T308	GM	0.10-0.28	0.5-3.0							●											○	●	○		
	16T308	HM	0.10-0.28	0.5-3.0							●							○								
	16T308	MT	0.10-0.28	0.5-3.0															●							
	16T308	NN	0.10-0.28	0.5-3.0																	●					
	16T308	PK	0.10-0.28	0.5-3.0					●																	
	16T308	XS	0.10-0.28	0.5-3.0													●									
TCMT	16T312	HM	0.10-0.32	0.7-3.2							●			○				○								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



VBMT

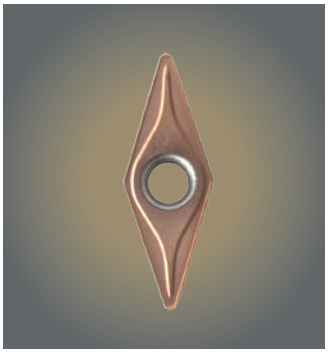
Positive 7° clearance triangular inserts

Dimensions (mm)			
Size	d	t	r
11	6.35	3.18	0.4-0.8
16	9.52	4.76	0.4-0.12

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
VBGT	110302		0.05-0.15	0.2-1.5																		○				●
VBGT	110304		0.08-0.20	0.5-1.5																		○				●
VBMT	110304	FQ	0.05-0.20	0.4-1.5	●		○																			
	110304	GF	0.08-0.20	0.4-1.5																		○	●	○		
	110304	XS	0.05-0.20	0.4-1.5													●									
VBGT	110308		0.08-0.20	0.5-2.0																						●
VBMT	110308	GM	0.10-0.20	0.5-2.0																		○	●	○		
VBGT	160404		0.05-0.15	0.5-1.5																		○				●
VBMT	160404		0.05-0.20	0.2-2.0							○			○				○								
	160404	CR	0.05-0.20	0.2-2.0							●															
	160404	FQ	0.07-0.20	0.2-2.2	●	●	●			○																
	160404	GF	0.07-0.20	0.2-2.2																		○	●	●		
	160404	GM	0.80-0.20	0.2-2.2							●												○			
	160404	NN	0.80-0.25	0.2-2.2																	●					
	160404	PK	0.80-0.25	0.2-2.2					●																	
	160404	PSF	0.80-0.20	0.2-2.2	●		○																			
	160404	XS	0.80-0.20	0.2-2.0													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



VBMT

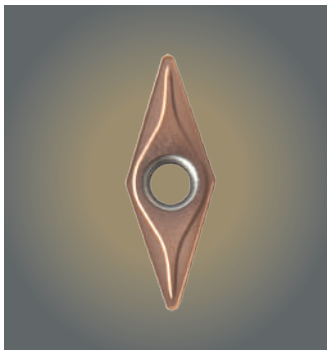
Positive 7° clearance triangular inserts

Dimensions (mm)			
Size	d	t	r
11	6.35	3.18	0.4-0.8
16	9.52	4.76	0.4-0.12

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated								PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
VBGT	160408		0.1-0.20	0.9-3.0																	○				●
VBMT	160408		0.1-0.20	0.9-3.0							●														
	160408	BF	0.08-0.20	0.9-3.0													○				○	○			
	160408	FG	0.08-0.20	0.7-3.0	●		○																		
	160408	FQ	0.08-0.22	0.7-3.0	●	●	●																		
	160408	GF	0.10-0.22	0.7-3.0					○		○											○	●	○	
	160408	GM	0.10-0.22	0.7-3.5							○													●	
	160408	HR	0.08-0.22	0.9-3.0							●							●							
	160408	NN	0.1-0.25	0.8-3.5																	●				
	160408	PK	0.1-0.25	0.8-3.5					●																
	160408	PSF	0.1-0.25	0.9-3.0	●		○																		
	160408	XS	0.1-0.25	0.9-3.0													●								
VBMT	160412		0.1-0.20	0.9-3.0							○							○							
	160412	HR	0.1-0.20	0.9-3.0							○							●							

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



VCMT

Positive
7° clearance
35° Rhombic inserts

Dimensions (mm)			
Size	d	t	r
11	6.35	3.18	0.4-0.8
16	9.52	4.76	0.4-0.12

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cermet			CVD Coated									PVD Coated									UNC
					XC615	XC815	XC825	XP7015	XP7020	XP7030	XP7125	XP7235	XK3120	XK3215	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035	XA330
VCGT	110302		0.02-0.15	0.2-1.5																						●
VCMT	110302	GF	0.02-0.15	0.2-1.5																			○	○	○		
VCGT	110304		0.02-0.20	0.2-2.0																						●
VCMT	110304	GF	0.05-0.20	0.3-2.0																			○	●	○		
	110304	GM	0.05-0.20	0.3-2.0																			○	○	○		
	110304	XS	0.05-0.20	0.3-2.0													●										
VCGT	110308		0.02-0.20	0.2-2.0																						●
VCMT	110308	GM	0.05-0.25	0.5-2.5																			○	●	○		
VCGT	160404		0.02-0.20	0.2-1.5																						●
VCMT	160404	GF	0.05-0.25	0.3-2.2																			○	●	○		
	160404	GM	0.05-0.25	0.3-2.2				○															○	○			
	160404	XM	0.05-0.25	0.3-2.2						○																	
VCGT	160408		0.07-0.20	0.3-2.5																						●
VCMT	160408	GM	0.07-0.20	0.3-2.5																			○	●	○		
	160408	XM	0.07-0.20	0.3-2.5						○																	

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE