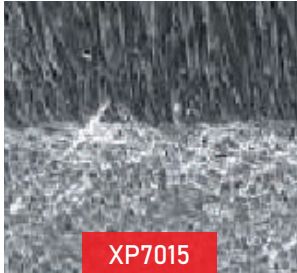


TURNING

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.

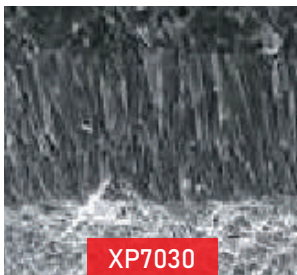


P10-P25

TiAlN over TiCN layer with antiwear material abrasion 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 preturnd/soft automotive steels at high parameters.



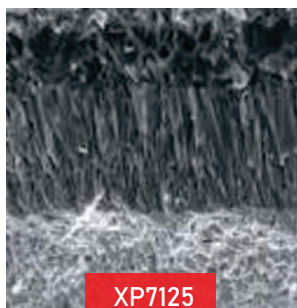
P15-P35

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.



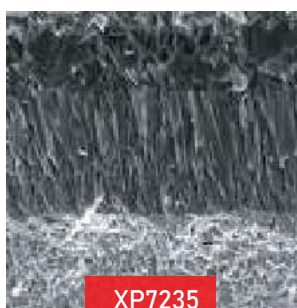
P10-P30 | K10-K20

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 abrasion 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 abrasion 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

TURNING

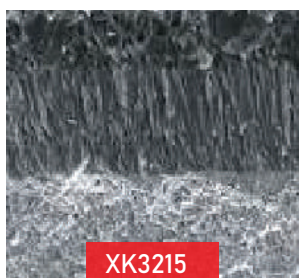
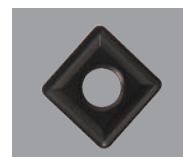


XK3120

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



XK3215

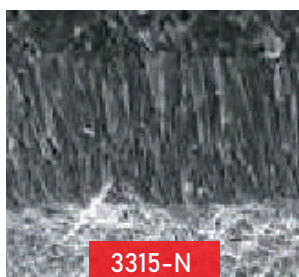
K10-K20 | P05-P15

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.



3315-N

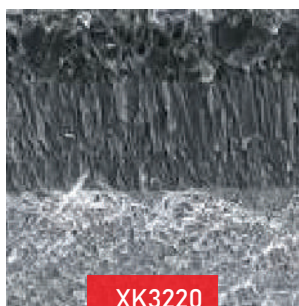
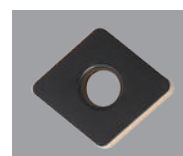
K10-K25

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.



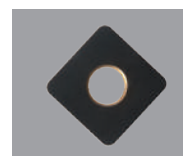
XK3220

K15-K30

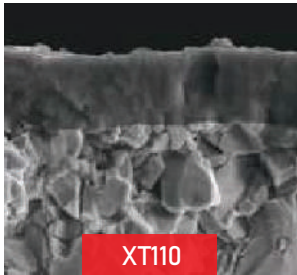
Thick Al₂O₃ over TiCN coating combined with strong impact resistance matrix keeps the insert stable at high temperature.

TiCN layer with antiwear material abrasion performance lead to the best wear resistant of the face of clearance angle.

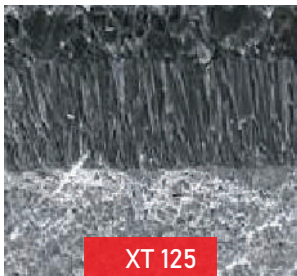
High wear resistance substrate provides added stability to machine Gray & Ductile Cast Iron.



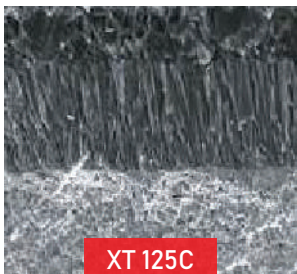
GRADE INFORMATION

**P10-P25 | M05-M15 | K10-K25**

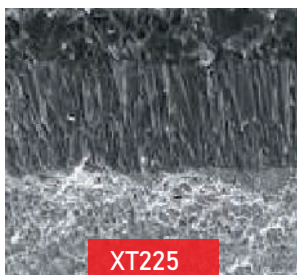
Special coating designed to be able to cater most materials under different machining environments.
Enhanced performance under low end machining conditions.
Substrate and PVD coating designed to improve strength & wear resistance

**P10-P30 | M10-M25 | K10-K20**

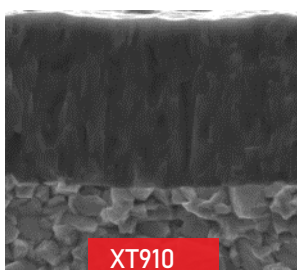
2-4 μ ALCrN+ALCrSiN PVD Coated, Combining with fine particles substrates with High-Toughness, suitable for all materials in light & medium load turning, stainless steel & high-Temperature hardness alloy in finishing, semi-finishing.

**P15-P30 | M15-M30**

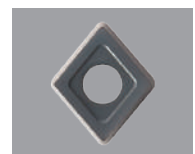
High adhesion strength to the substrate improves stable tool life. Due to the excellent heat resistance and oxidation resistance, the XT125-C prevents a failure of tool life even when machining hardened work piece.
Due to the cemented carbide with high wear resistance and fracture resistance, the XT125-C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

**P15-P30 | M15-M30 | S05-S15**

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

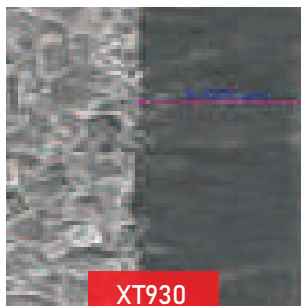
**P15-P30 | M10-M20 | K10-K30**

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

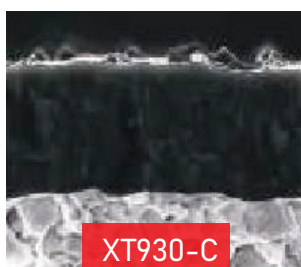
TURNING



XT930

P15-P30 | M15-M30 | S05-S15

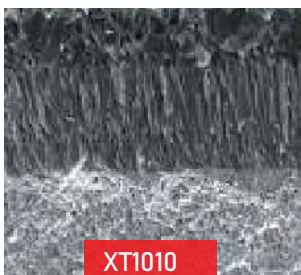
Ultra-fine grain matrix, nano-multilayer coating of AlTiMeN with good wear resistance and oxidation resistance. Stable, long-life turning of steel and stainless steel. Can also work on softer super alloys.



XT930-C

P15-P35 | M15-M35 | H05-H15

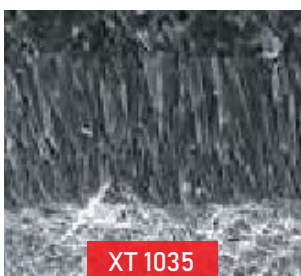
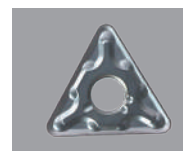
Ultra fine grade with Nano coating for high heat resistance and toughness. Special AlTiMeN coating gives it a bronze shade and higher temperature resistance! The first choice for general-purpose machining of stainless steel. It can be used for supplementary machining of soft steels.



XT1010

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.



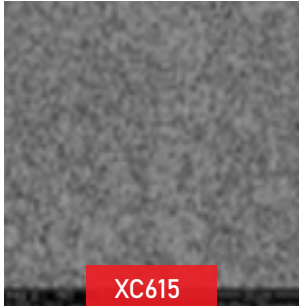
XT 1035

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.



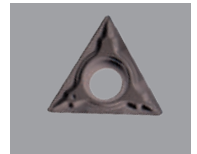
GRADE INFORMATION



XC615

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.



XC815

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 intermittent 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.

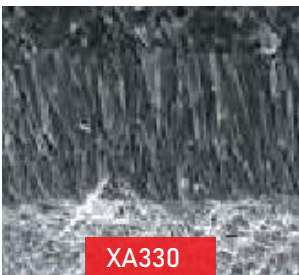


XC825

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 abrasion performance lead to the best wear resistant of the face of clearance angle.



XA330

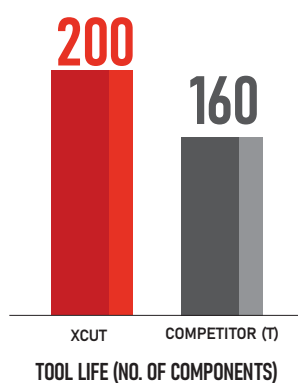
N10-N20 (Si<13%)

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

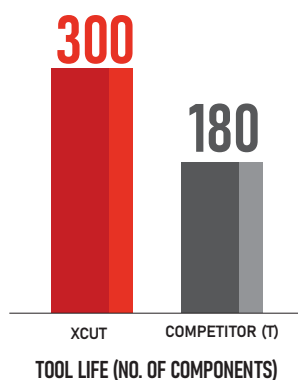


CASE STUDIES

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%		



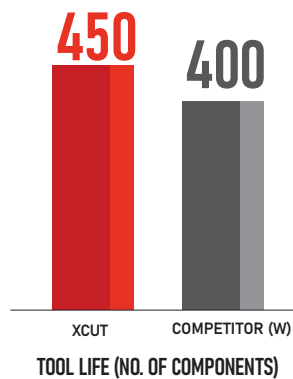
XT1010		
PRODUCT DESCRIPTION	TNMG160408SM-XT1010	
MATERIAL & HARDNESS	HARDENED STEEL & 60HRC	
PARAMETERS	COMPETITOR (T)	XCUT
Depth of Cut	0.2mm	0.2mm
Vc: m/min	70	70
Fz: mm/tooth	0.11	0.12
Life Increased by 60%		



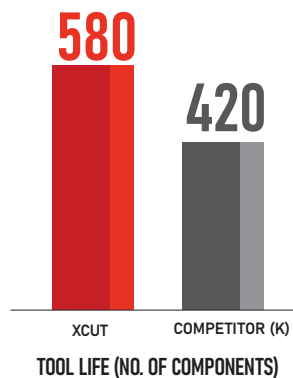
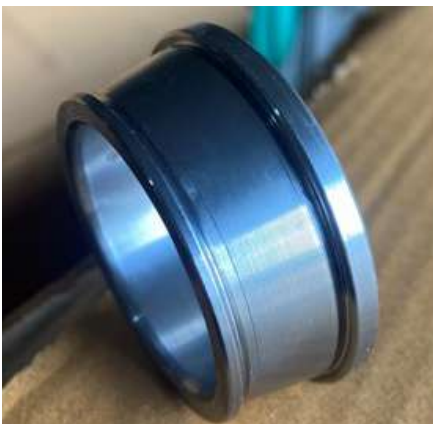
CASE STUDIES

TURNING

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%		



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%		



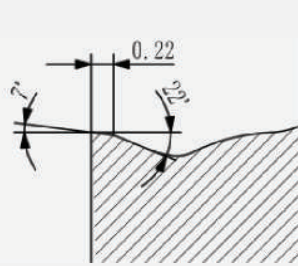
GRADE CHART

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

APPLICABLE CHIPBREAKERS

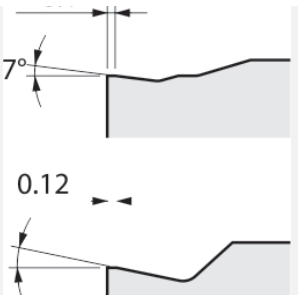
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

CR



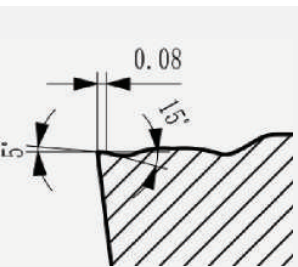
- General Purpose chip-breaker; recommended mainly for Semi Finishing
- Provides excellent cutting edge sharpness due to the positive land geometry.
- Works extremely well for Steel and Stainless Steel applications.

CQ



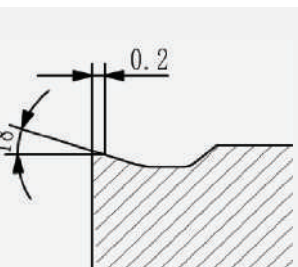
- Semi Finishing chipbreaker
- Good chip control for varied as such as copying
- Very suitable for face turning

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

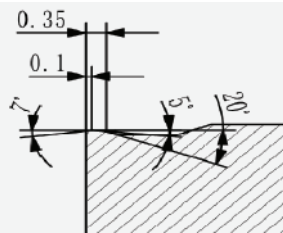
GM



- 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.

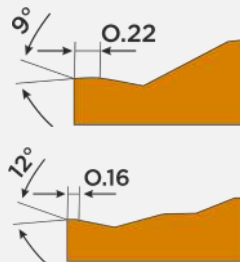
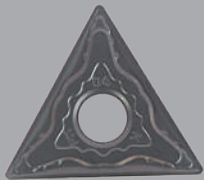
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

GR



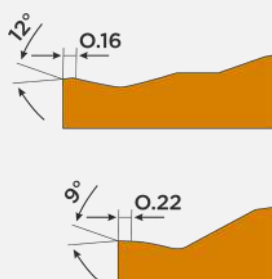
- Negative chamfer design, suitable for large depth of cut and larger feed parameters, to obtain high edge strength and high metal removal rate.
- Effective for heavy interruptions as well

PK



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

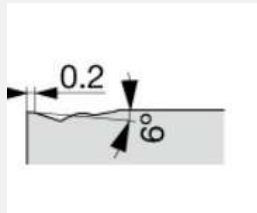
TM



- 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

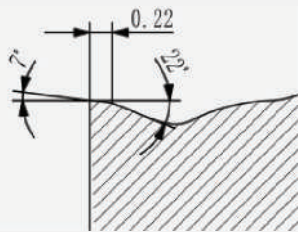
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-STEEL)

PR



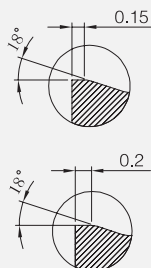
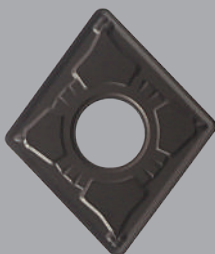
- Strong chip breaking ability , highly suitable for roughing processing of different steels .
- Can take A_p upto 3mm depending on the insert.

VF



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

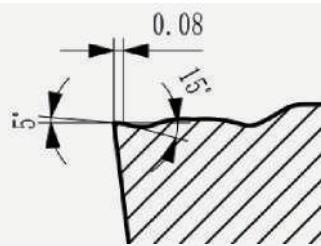
XM



- 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.

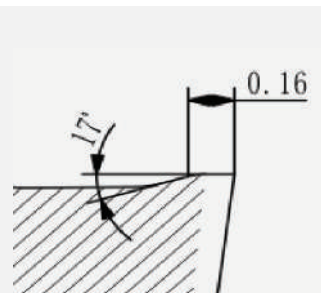
CHIPBREAKERS FOR POSITIVE INSERTS (CVD-STEEL)

GF



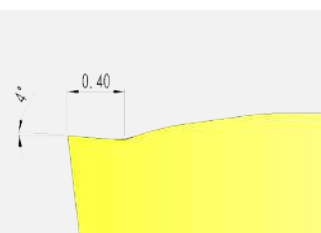
- The double positive rake angle design ensures the sharpness of the insert and low cutting resistance.
- The double chip breaker design broadens the chip breaking range.
- Suitable for finishing of steel, stainless steel and cast iron

GM



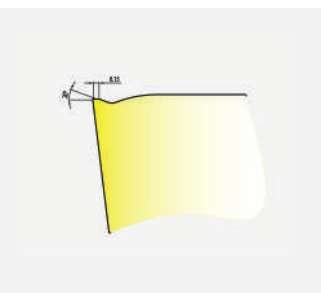
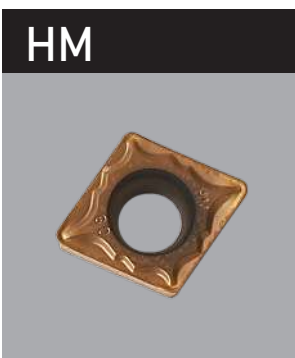
- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi - finishing of steel stainless steel and cast iron.

HF



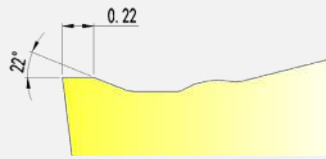
- Chipbreaker for finishing with wide application With M-level tolerance inserts,
- It is suitable for internal and external finishing of various materials such as steel, stainless steel and cast iron.

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

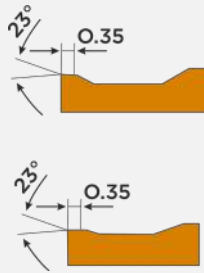
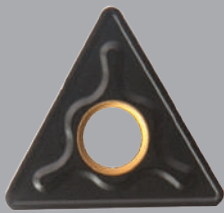
CHIPBREAKERS FOR POSITIVE INSERTS (CVD-STEEL)

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.

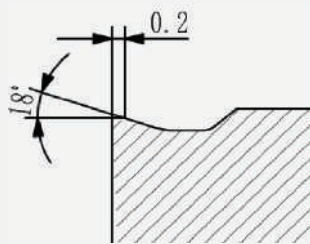
CHIPBREAKERS FOR NEGATIVE INSERTS (CVD-CAST IRON)

GH



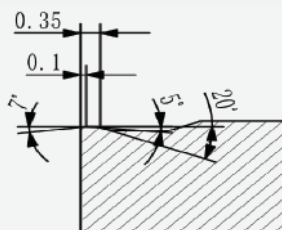
- K type double sided chipbreaker, ensures lighter load on heavy roughing,
- Can achieve both high level metal removal rate and good life on interrupted cutting of Cast Irons also

GM



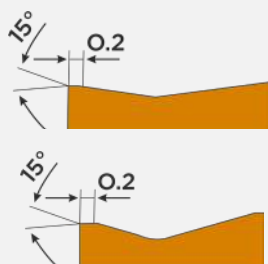
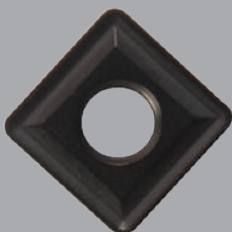
- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel stainless steel and cast iron.

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

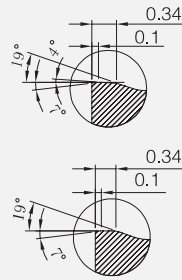
UC



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

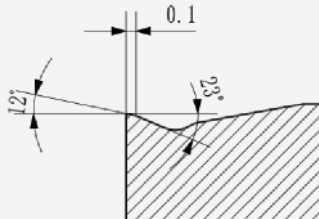
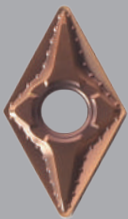
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

AR



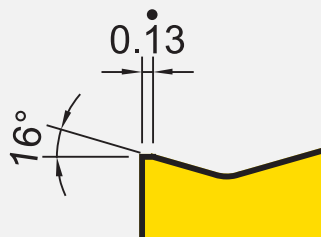
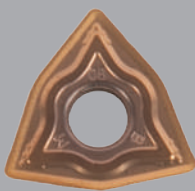
- The cutting edge has high strength and performs a long service life in roughing and harsh working.

BF



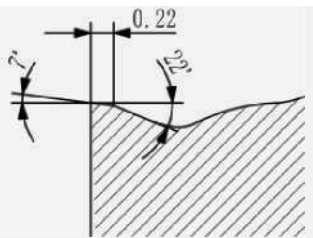
- M-level double-sided chipbreaker, small edge width + double positive rake angle, sharp blade edge.
- Low cutting resistance, special edge inclination design, can obtain high-quality machined surface.

BM



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

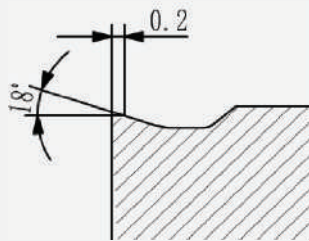
CR



- 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.

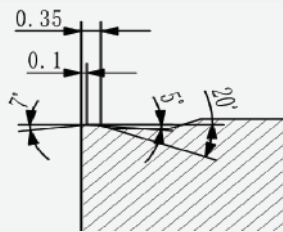
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

GM



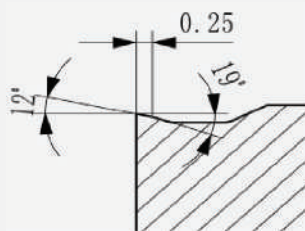
- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel, stainless steel and cast iron.

GR



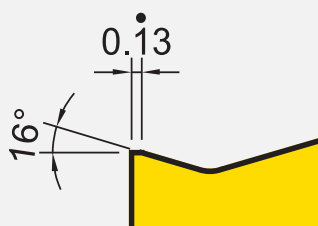
- Negative chamfer design, suitable for large depth of cut and larger feed parameters, to obtain high edge strength and high metal removal rate.
- Effective for heavy interruptions as well.

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 and strength suitable for semi finish, especially on difficult to cut materials

CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

NM



11°

- 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



10°

- 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



7°

- 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

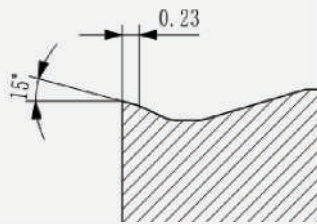


0°

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

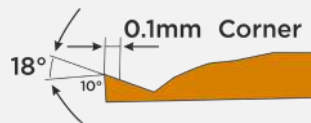
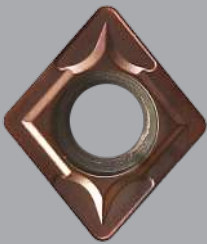
CHIPBREAKERS FOR NEGATIVE INSERTS (MULTI-GRADE PVD)

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.

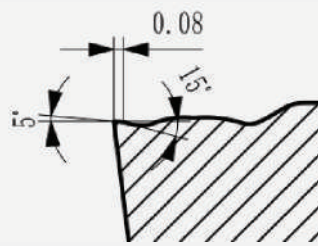
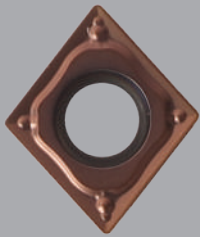
XS



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

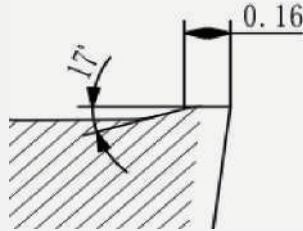
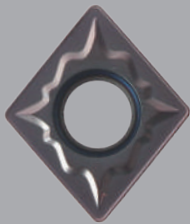
CHIPBREAKERS FOR POSITIVE INSERTS (MULTI-GRADE PVD)

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



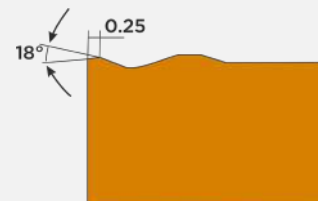
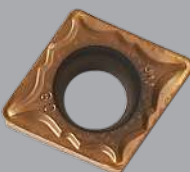
- On the basis of ensuring the sharpness of the cutting edge, the strength of the cutting edge is enhanced.
- General Machining Chipbreaker Suitable for semi-finishing of steel stainless steel and cast iron.

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.

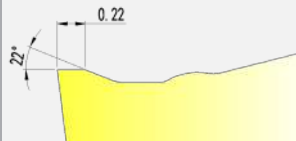
HM



- 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

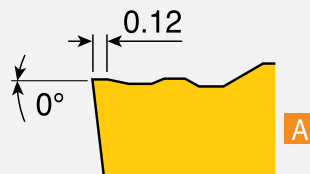
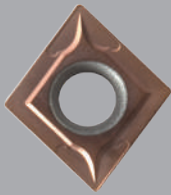
CHIPBREAKERS FOR POSITIVE INSERTS (MULTI-GRADE PVD)

HR



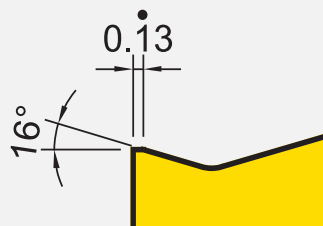
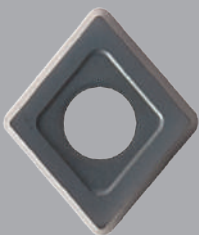
- General chipbreaker for positive inserts for roughing with M-level tolerance,
- It is suitable for both internal and external roughing of materials such as steel, stainless steel, cast iron, etc.

MT



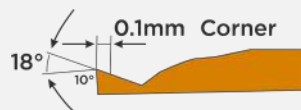
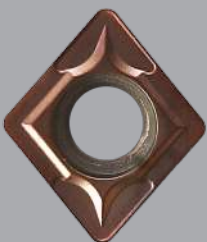
- Negative rake geometry for general use
- For medium to medium rough applications of Steel, stainless steel and cast iron machining

NN



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

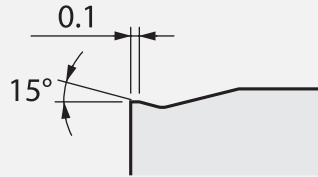
XS



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

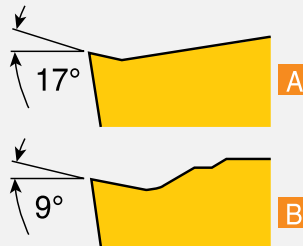
CHIPBREAKERS FOR CERMET INSERTS

FQ



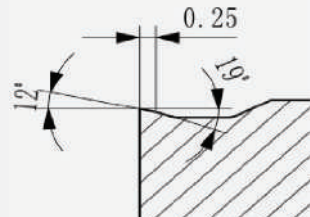
- Used for semi finish to finish applications
- Double sided chipbreaker with bulged rake angle enables sharp cutting

FG



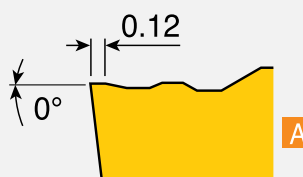
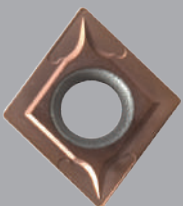
- Used mainly for finishing
- Low cutting forces
- Excellent chip control
- For finish and semi finish applications for Steel, stainless steel and cast iron machining

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

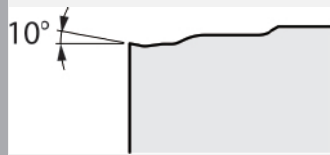


- Negative rake geometry for general use
- For medium to medium rough applications of Steel, stainless steel and cast iron machining

CHIPBREAKERS FOR CERMET INSERTS

TURNING

PP



- 3 step dot structure realizes stable chip control at a wide range of feed rate.
- Less cutting force 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	± 0.13	±0.025
G			
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
(1)

N
(2)

M
(3)

G
(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

(5)

04

(6)

08

(7)

GM

(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 MO (metric)

(8) Manufacture's Option

Hans Symbol Chipbreaker Symbol, etc.



CNMG

NEGATIVE 80

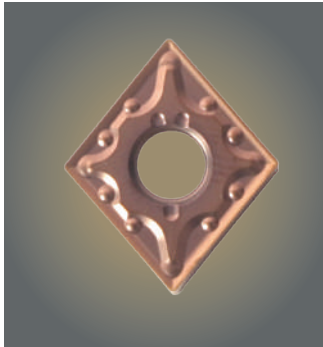
RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
09	9.2	4.76	0.4-0.8
12	12.7	4.76	0.4-1.6
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-1.6

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
CNMG	090304	XM	0.10-0.30	0.4-3.0						●															
	090308	XM	0.15-0.40	0.5-3.0						●															
CNMG	120404		0.15-0.40	0.8-4.0									●	●		●									●
	120404	BF	0.12-0.30	0.5-3.0																●	●	○			
	120404	CR	0.15-0.40	0.8-4.0														●	●	●	○	●	●		
	120404	GF	0.12-0.30	0.5-3.0							●														
	120404	GM	0.1-0.3	0.5-4.0							●														
	120404	MS	0.1-0.4	0.5-4.0	●	●	●													●	●	○			
	120404	NN	0.15-0.40	0.8-4.0														●							
	120404	PK	0.1-0.3	0.5-4.0					●																
	120404	PR	0.1-0.40	0.5-0.35					●																
	120404	TM	0.08-0.30	0.1-3.0				●																	
	120404	XM	0.08-0.30	0.1-3.0						●															
	120404	XS	0.12-0.30	0.5-3.0													●								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



CNMG

NEGATIVE 80

RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
09	9.2	4.76	0.4-0.8
12	12.7	4.76	0.4-1.6
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-1.6

TURNING

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
CNMG	120408		0.17-0.55	1.2-5.0																					
	120408	BF	0.1-0.4	1.0-4.0																					
	120408	BM	0.17-0.55	1.2-5.0																					
	120408	CR	0.15-0.55	1.0-5.0																					
	120408	GM	0.15-0.50	1.0-4.0																					
	120408	GH	0.1-0.4	1.0-0.35																					
	120408	GR	0.15-0.55	1.0-5.0																					
	120408	MS	0.12-0.4	1.0-5.0																					
	120408	NM	0.15-0.50	1.0-5.0																					
	120408	NN	0.15-0.55	1.0-5.0																					
	120408	PK	0.12-0.4	1.0-5.0																					
	120408	PR	0.15-0.5	1.0-5.0																					
	120408	SM	0.15-0.4	1.0-4.0																					
	120408	TM	0.12-0.35	0.8-4.0																					
	120408	UC	0.15-0.4	1.0-4.0																					
	120408	XS	0.08-0.35	1.0-4.0																					
	120408	XM	0.15-0.45	1.0-4.0																					

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CNMG

NEGATIVE 80

RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
09	9.2	4.76	0.4-0.8
12	12.7	4.76	0.4-1.6
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-1.6

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
CNMG	120412		0.20-0.55	1.5-5.0									●	●		●										
	120412	BM	0.20-0.55	1.2-5.0														●		●						
	120412	CR	0.15-0.5	1.5-5.0															●	●		○	●	●		
	120412	GH	0.15-0.45	1.2-5.0												●										
	120412	GM	0.15-0.6	1.5-5.0							●	○						●		○			○			
	120412	GR	0.20-0.55	2.0-5.0							●	●		○				●		●			○			
	120412	MS	0.20-0.5	1.5-5.0	○																●	●				
	120412	NN	0.17-0.55	1.0-5.0																	●					
	120412	NR	0.20-0.55	2.0-5.0																					●	
	120412	PK	0.15-0.55	1.2-5.0					●																	
	120412	PR	0.20-0.55	1.5-5.0					●																	
	120412	SM	0.17-0.55	1.2-5.0																	●	●	○			
	120412	TM	0.12-0.4	1.0-5.0				●			○															
	120412	UC	0.17-0.45	1.2-5.0											●	●										
	120412	XM	0.15-0.4	1.0-5.0						●																
CNMG	120416		0.20-0.55	1.5-6.0										●												
	120416	GM	0.20-0.6	2.0-6.0							○	●						○								
	120416	NR	0.18-0.55	1.5-6.0																					●	
	120416	XM	0.20-0.55	1.5-5.0						●																

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



CNMG

NEGATIVE 80

RHOMBIC INSERTS

Dimensions (mm)			
Size	d	t	r
09	9.2	4.76	0.4-0.8
12	12.7	4.76	0.4-1.6
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-1.6

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
CNMG	160608	GM	0.15-0.55	2.0-6.5							●	○						○		○						
	160608	GR	0.20-0.55	2.0-6.5							○	○						○								
	160608	SM	0.20-0.6	2.0-6.5																	○	●				
CNMG	160612	AS	0.20-0.6	2.0-6.5																	○	●				
	160612	GM	0.15-0.55	2.0-6.5							●	○						●		○						
	160612	GR	0.18-0.55	2.0-6.5							○	●						○		○						
	160612	XM	0.15-0.55	2.0-6.5						●																
CNMG	160616	BM	0.25-0.55	2.0-6.5																	○	●				
	160616	GM	0.25-0.55	2.0-6.5							●	○						○								
	160616	GR	0.30-0.55	2.0-6.5							○	○						○		○						
	160616	XM	0.30-0.55	2.0-6.5						●																
CNMG	190608	GM	0.23-0.55	3.0-8.0							●	○						●		○						
	190608	SM	0.23-0.55	3.0-8.0																		●	○			
CNMG	190612	GR	0.30-0.55	3.0-8.0							●	○						●		○						
	190612	NM	0.25-0.55	3.0-8.0																					●	
	190612	SM	0.30-0.55	2.5-8.0																		●	●			
CNMG	190616	AR	0.30-0.55	3.0-8.0																		○	●			
	190616	GR	0.30-0.55	3.0-8.0						●	●	●						○								
	190616	NR2	0.30-0.55	3.0-8.0																					●	
CNMA	120404		0.15-0.45	1.5-5.0									●	○	○	●										
	120408		0.20-0.55	1.5-5.0									●	●	●	●										
	120412		0.20-0.55	1.5-5.0									●	●	●	●										

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



DNMG

Negative 55° rhombic inserts

Dimensions (mm)			
Size	d	t	r
11	9.52	4.76	0.4-1.2
15	12.7	4.76-6.35	0.4-1.6

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
DNMG	110404	BM	0.07-0.20	0.5-2.0	●													●								
	110404	GM	0.07-0.20	0.5-2.0							●							●		○						
	110404	PK	0.07-0.20	0.5-2.0					●																	
	110404	XM	0.07-0.15	0.5-1.5						●																
DNMG	110408	BM	0.10-0.25	0.7-2.5							○							●		○						
	110408	GM	0.10-0.25	0.7-2.0							●							○								
	110408	PK	0.08-0.20	0.7-2.5					●																	
	110408	XM	0.08-0.25	0.7-2.0						●																
DNMG	110412	GM	0.07-0.20	0.5-2.0							●															
DNMG	150404	CR	0.05-0.2	0.1-2.0							○							●		●						
	150404	GF	0.05-0.18	0.1-1.5							●							○								
	150404	GM	0.05-0.2	0.1-2.0							●							○								
	150404	NN	0.05-0.2	0.1-1.5																	●					
	150404	TM	0.05-0.2	0.1-1.5						○	●															
DNMG	150408	CR	0.13-0.50	0.5-5.0														●		●						
	150408	GF	0.13-0.40	0.5-4.0							●	○						○								
	150408	GM	0.10-0.45	0.5-4.0							●							○								
	150408	NN	0.13-0.50	0.1-5.0																	●					
	150408	TM	0.10-0.50	0.1-5.0						○	●															
DNMG	150412	GM	0.08-0.40	0.5-3.0							●							○								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



DNMG

Negative 55° rhombic inserts

Dimensions (mm)			
Size	d	t	r
11	9.52	4.76	0.4-1.2
15	12.7	4.76-6.35	0.4-1.6

TURNING

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
DNMG	150604		0.05-0.30	0.2-2.5										●		●									
	150604	BF	0.05-0.30	0.2-2.5																○	●	○			
	150604	CR	0.08-0.32	0.4-3.0							○						●		●						
	150604	GF	0.05-0.30	0.2-2.0							●	○													
	150604	GM	0.05-0.35	0.2-3.0							●	○						○							
	150604	NN	0.08-0.35	0.4-2.5															●						
	150604	PK	0.05-0.32	0.2-3.0					●																
	150604	PR	0.08-0.35	0.4-2.5					●																
	150604	SM	0.08-0.35	0.5-2.5																●	○	●			
	150604	TM	0.05-0.25	0.2-2.5				○			●														
	150604	UC	0.05-0.30	0.4-2.5											○	●									
	150604	XM	0.08-0.30	0.2-2.5						●															
DNMG	150608		0.08-0.35	0.5-4.0										●		●									
	150608	BF	0.08-0.35	0.4-5.0																○	●	○			
	150608	BM	0.1-0.35	0.6-5.0														○			○	●	●		
	150608	CR	0.08-0.35	0.5-4.0							○							●		●					
	150608	GF	0.07-0.35	0.3-3.5							●	●						○							
	150608	GH	0.1-0.35	1.0-4.0									●		○	●									
	150608	GM	0.1-0.4	0.5-5.0							●	○		●					○						
	150608	GR	0.1-0.5	0.8-4.0							○	●		○											
	150608	NM	0.08-0.4	0.5-5.0																			●		
	150608	NN	0.08-0.4	1.0-4.5																●					
	150608	PK	0.1-0.4	0.5-4.0					●																
	150608	PR	0.12-0.5	1.2-5.0					●																
	150608	SM	0.12-0.4	1.0-4.0																●	○	●			
	150608	TM	0.08-0.35	0.5-4.0					○		●														
	150608	XM	0.08-0.35	0.3-4.5						●															
	150608	UC	0.08-0.35	0.3-4.5											○	●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



DNMG

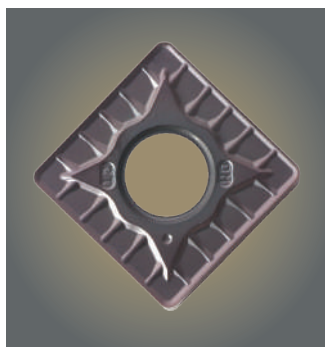
Negative 55° rhombic inserts

Dimensions (mm)			
Size	d	t	r
11	9.52	4.76	0.4-1.2
15	12.7	4.76-6.35	0.4-1.6

Designation		CHIP BREAKER	Feed (mm/rev)	ap (mm)	Cemet			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
DNMG	150612		0.15-0.55	0.5-5.0									●		○	●									
	150612	GH	0.15-0.55	0.5-5.0									●		○	●									
	150612	GM	0.15-0.55	0.5-5.0							●	●						○							
	150612	GR	0.15-0.55	1.2-5.0							●	●						○							
	150612	NN	0.17-0.55	1.2-5.0																●					
	150612	NR	0.17-0.55	0.5-5.5																				●	
	150612	PK	0.15-0.55	1.0-5.5					●																
	150612	PR	0.17-0.55	1.0-5.5					●																
	150612	TM	0.12-0.5	0.5-5.0				○	○																
	150612	UC	0.12-0.55	0.5-5.0											○	●									
	150612	XM	0.12-0.55	0.5-5.0						●															
DNMG	150616	GR	0.17-0.55	1.2-5.0							○	●						○							

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



SNMG

Negative Square Inserts

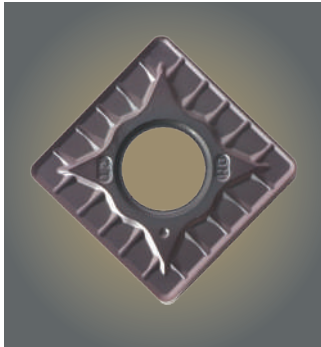
Dimensions (mm)			
Size	d	t	r
12	12.7	4.6	0.4-1.6
15	15.88	6.35	1.2
19	19.05	6.35	0.8-1.6
25	25.4	7.94-9.52	2.4

TURNING

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
SNMG	120404		0.05-0.20	0.1-1.5									●			○										
	120404	HA	0.05-0.20	0.1-1.5																						●
	120404	BM	0.08-0.22	0.1-2.0														●		○						
	120404	GM	0.05-0.20	0.1-2.0							●	○														
	120404	MS	0.05-0.22	0.1-2.5																	●	○				
	120404	UC	0.05-0.22	0.1-2.0									○		○	●										
SNMG	120408		0.13-0.50	0.8-3.0									●		○	●										
	120408	BF	0.12-0.45	0.8-4.0														●		○						
	120408	BM	0.12-0.45	0.8-4.0														●		○			●			
	120408	FQ	0.12-0.50	0.8-4.0	●																					
	120408	GM	0.15-0.50	0.8-4.0							●	○		○												
	120408	GR	0.15-0.50	0.9-4.0							○	●														
	120408	HA	0.13-0.50	0.8-4.0																						●
	120408	MS	0.12-0.40	0.8-3.5																		●	●	○		
	120408	NN	0.15-0.50	0.8-4.5																	●					
	120408	NR	0.17-0.50	0.7-4.5																						●
	120408	SM	0.15-0.40	1.0-5.0																		○	○	●		
	120408	TM	0.10-0.50	0.8-3.5					●		○															
	120408	UC	0.13-0.50	0.8-4.0									○			●										
	120408	XM	0.13-0.50	0.8-4.0						●																

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



SNMG

Negative Square Inserts

Dimensions (mm)			
Size	d	t	r
12	12.7	4.6	0.4-1.6
15	15.88	6.35	1.2
19	19.05	6.35	0.8-1.6
25	25.4	7.94-9.52	2.4

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
SNMG	120412		0.25-0.60	2.0-5.0									●			○									
	120412	BM	0.20-0.50	2.0-5.0														●		●					
	120412	GM	0.25-0.60	2.0-5.0							●	○		○											
	120412	GR	0.27-0.60	2.5-5.0							●	○		○											
	120412	MS	0.25-0.60	2.5-5.0																	●	●	○		
	120412	PK	0.27-0.60	2.0-5.0					●																
	120412	TM	0.25-0.60	1.5-4.5					○	○															
	120412	UC	0.27-0.60	1.5-5.0									○			●									
	120412	XM	0.25-0.60	2.0-5.0						●															
SNMG	150612	GR	0.25-0.60	2.0-6.0							●														
SNMG	190608	SM	0.25-0.60	3.0-8.0																	●	○	○		
SNMG	190612	GM	0.27-0.60	3.0-8.0							●	○													
	190612	GR	0.30-0.60	3.0-8.0							●	○													
	190612	SM	0.27-0.60	3.0-8.0																	○	●			
	190612	XM	0.30-0.60	3.0-8.0						●															
SNMG	190616	AR	0.35-0.70	3.0-8.0																	○	●			
	190616	GM	0.27-0.6	3.0-6.0							●	○													
	190616	GR	0.35-0.70	3.0-8.0							●	○													
	190616	XM	0.30-0.70	2.5-7.0						●															
SNMG	250724	GR	0.50-1.00	5.0-12.0								●													
SNMA	120404		0.15-0.35	1.0-4.0									●	○	○	○									
	120408		0.15-0.70	1.0-6.0									●	●	○	●									
	120412		0.20-0.80	1.5-6.0									●	●	○	●									
	120416		0.20-0.80	1.5-6.0									●			○									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TNMG

Negative Triangular Insert

Dimensions (mm)			
Size	d	t	r
16	9.52	4.76	0.4-1.6
22	15.88	4.76	0.4-1.6

TURNING

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
TNMG	160404		0.17-0.45	1.5-3.5									●	○	○	●										
	160404	BF	0.12-0.40	1.5-3.5														●		○		●	●			
	160404	BM	0.12-0.40	1.5-3.5														●		○						
	160404	CR	0.17-0.45	1.5-4.0														●	●	○		○	○	○		
	160404	CQ	0.17-0.45	1.5-4.0					●	○																
	160404	FQ	0.15-0.40	1.5-3.5	●	○	●																			
	160404	GF	0.15-0.40	1.5-3.5							●	○														
	160404	GM	0.17-0.45	1.5-4.0							●	○		○				○		○						
	160404	HA	0.17-0.45	1.5-3.5																						●
	160404	MS	0.15-0.45	1.5-4.0	●	○	●																			
	160404	NN	0.15-0.45	1.2-2.0																	●					
	160404	PK	0.12-0.45	1.3-3.5					●	○																
	160404	PR	0.12-0.45	1.5-3.5					●																	
	160404	TM	0.15-0.35	1.2-3.5				●	○	○	○															
	160404	UC	0.15-0.45	1.5-4.0									○		○	○										
	160404	XM	0.15-0.40	1.5-3.5						●																
	160404	XS	0.15-0.40	1.5-3.5													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TNMG

Negative Triangular Insert

Dimensions (mm)			
Size	d	t	r
16	9.52	4.76	0.4-1.6
22	15.88	4.76	0.4-1.6

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
TNMG	160408		0.17-0.55	2.0-3.5									●	○	○	●										
	160408	BF	0.15-0.50	1.5-3.5														●		○		●	●	●		
	160408	BM	0.15-0.55	2.0-4.0														●		○		○	○	○		
	160408	CQ	0.15-0.55	2.0-3.5				○	●	○											○	○	○			
	160408	CR	0.17-0.55	2.0-4.0							○							○	●	●	●		○	●	●	
	160408	FG	0.15-0.45	1.5-3.5	●	○	○																			
	160408	FQ	0.17-0.50	1.5-3.5	●	○	●																			
	160408	GF	0.12-0.50	1.2-3.5							●	○														
	160408	GH	0.17-0.55	2.0-3.5									○			●										
	160408	GM	0.15-0.55	1.5-3.5							●	●		●				○		●						
	160408	GR	0.17-0.55	2.0-4.5							○	○		○				○		●						
	160408	HA	0.12-0.4	2.0-3.5																						●
	160408	ISP	0.17-0.55	2.0-4.5					●	○																
	160408	MS	0.17-0.50	2.0-4.0	●		●															●	●	○		
	160408	NM	0.15-0.55	2.0-4.0																					○	
	160408	NN	0.15-0.50	1.5-4.5																	●					
	160408	PK	0.15-0.5	1.5-4.0					●	○																
	160408	PR	0.18-0.50	2.0-4.5					●	○																
	160408	SM	0.15-0.55	1.5-4.5																		●	○	●		
	160408	TM	0.12-0.45	2.0-3.5				●	●	○	○															
	160408	UC	0.17-0.55	2.0-4.0									○		○	●										
	160408	XM	0.15-0.50	1.2-3.5						●																
	160408	XS	0.17-0.55	1.5-3.5													●									

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TNMG

Negative Triangular Insert

Dimensions (mm)			
Size	d	t	r
16	9.52	4.76	0.4-1.6
22	15.88	4.76	0.4-1.6

TURNING

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
TNMG	160412		0.15-0.55	0.8-4.5								●	○	○	●										
	160412	CR	0.15-0.55	0.8-5.0													●	●	●		○	●	○		
	160412	CQ	0.15-0.55	1.0-4.5					●	○															
	160412	GF	0.17-0.55	1.0-4.5							○														
	160412	GH	0.17-0.55	2.0-4.5								○				●									
	160412	GM	0.15-0.55	1.0-5.0							●	●		○				○		○					
	160412	GR	0.15-0.55	2.0-5.0							●	●		○				○		○					
	160412	ISP	0.17-0.55	1.0-5.0					●	○															
	160412	MS	0.12-0.50	1.0-5.0																	●	●	○		
	160412	NN	0.15-0.55	1.5-5.0															●						
	160412	NR	0.15-0.55	1.5-5.0																				○	
	160412	PK	0.17-0.55	1.0-5.5					●																
	160412	PR	0.15-0.55	1.0-5.5					●	○															
	160412	UC	0.12-0.45	0.8-4.5								●		○	●										
	160412	XM	0.12-0.50	1.0-4.5						●															

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



TNMG

Negative Triangular Insert

Dimensions (mm)			
Size	d	t	r
16	9.52	4.76	0.4-1.6
22	15.88	4.76	0.4-1.6

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
TNMG	220404	GM	0.18-0.45	1.5-4.5							●	○												
TNMG	220408	GM	0.13-0.50	1.0-6.0							●	○												
	220408	XM	0.15-0.55	1.2-6.0						●														
TNMG	220412	GM	0.15-0.55	1.5-6.0							●	○												
	220412	XM	0.20-0.55	1.5-6.0						●														
TNMG	220416	GR	0.15-0.55	1.0-6.0							○	○												
	220416	XM	0.20-0.55	1.0-6.0						○														
TNMA	160404		0.17-0.45	1.5-3.5									●	○	○	●								
	160408		0.17-0.55	2.0-3.5									●	●	●	●								
	160412		0.15-0.55	0.8-4.5									●	●	●	●								

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



VNMG

Negative 35° rhombic inserts

Dimensions (mm)			
Size	d	t	r
12	7.15	3.99	0.4-0.8
16	9.52	4.76	0.2-1.2

TURNING

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	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035
VNMG	12T304	GM	0.08-0.20	0.5-2.0					●	●																	
VNMG	12T308	GM	0.10-0.25	0.5-2.5					●	●																	
VNMG	160402	HA	0.08-0.17	0.1-1.2																							●
VNMG	160404		0.08-0.20	0.5-2.0									●														
	160404	BF	0.08-0.20	0.4-2.0																		○	●	○			
	160404	CR	0.10-0.20	0.7-2.0																	●						
	160404	FQ	0.10-0.20	0.5-2.0	●		○																				
	160404	GF	0.08-0.20	0.3-2.0								●															
	160404	GM	0.10-0.25	0.5-2.2							●	○								●		●					
	160404	HA	0.07-0.20	0.5-2.5																							●
	160404	MT	0.08-0.22	0.5-2.5	●		●																				
	160404	NN	0.10-0.25	0.5-2.5																							
	160404	PK	0.10-0.25	0.5-2.5					●																		
	160404	SM	0.07-0.20	0.7-2.5																							
	160404	TM	0.08-0.20	0.7-2.2				●																			
	160404	VF	0.09-0.18	0.5-1.5					●	●																	
	160404	XM	0.05-0.018	0.5-2.0						●																	

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



VNMG

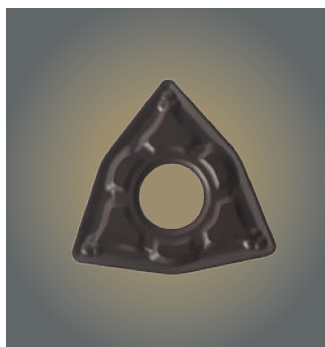
Negative 35° rhombic inserts

Dimensions (mm)			
Size	d	t	r
12	7.15	3.99	0.4/0.8
16	9.52	4.76	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	3315-N	XK3220	XT110	XT125	XT125C	XT225	XT910	XT930	XT930-C	XT1010	XT1035
VNMG	160408		0.17-0.36	1.0-2.5								●	○														
	160408	BF	0.15-0.30	1.0-2.5																		○	●	○			
	160408	CR	0.17-0.30	1.0-3.0																							
	160408	GF	0.15-0.30	0.8-2.5							●									○							
	160408	GM	0.17-0.36	1.0-3.0							●	○		○						●		●					
	160408	HA	0.15-0.30	1.0-2.5																							●
	160408	MA	0.15-0.30	1.0-3.0	●	●	○																				
	160408	NN	0.17-0.35	1.0-2.5																							
	160408	PK	0.17-0.35	0.8-2.5					●																		
	160408	SM	0.15-0.35	1.0-3.0																			●	○	●		
	160408	TM	0.15-0.35	1.0-2.5				●				○															
	160408	VF	0.17-0.35	1.0-2.5					●	●																	
	160408	XM	0.17-0.35	1.0-3.0						●																	
VNMG	160412	GM	0.17-0.35	0.5-3.0							●	○								○							

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



WNMG

Negative 35° Trigon inserts

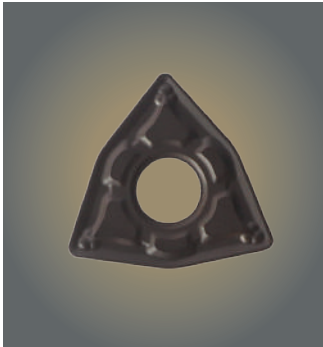
Dimensions (mm)			
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.4-1.2

TURNING

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
WNMG06	060404	AR	0.05-0.20	0.1-2.0							●														
	060404	EF	0.05-0.20	0.1-1.5							●									●	○				
	060404	GM	0.05-0.20	0.1-2.0							●	○						○							
	060404	NN	0.08-0.20	0.1-2.0																●					
	060404	XM	0.10-0.20	0.1-2.0						●															
WNMG06	060408		0.13-0.50	0.8-3.0										●											
	060408	EF	0.13-0.50	0.8-3.0																	●	○			
	060408	GM	0.15-0.50	1.0-3.0							●	○						○		○					
	060408	NN	0.15-0.45	1.0-3.0																●					
	060408	TM	0.13-0.40	0.8-3.0				○	○																
	060408	XM	0.13-0.40	0.8-3.0						●															
WNMG06	060412	AR	0.15-0.55	1.0-3.0							●	○						○							
WNMG08	080404		0.07-0.20	0.5-2.0									●	○		●									
	080404	CR	0.08-0.20	0.5-2.5														●	●	○		○	●		
	080404	GM	0.05-0.20	0.5-2.0							●			○											
	080404	HA	0.05-0.20	0.5-2.0																					●
	080404	MS	0.08-0.20	0.5-3.0	●																				
	080404	TM	0.07-0.20	0.5-2.0				●	○																
	080404	XM	0.07-0.20	0.5-2.0						●															

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



WNMG

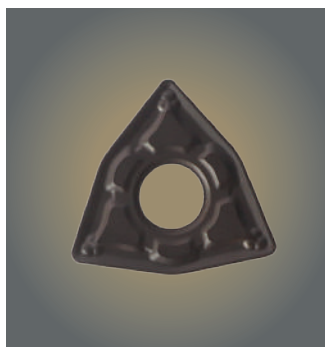
Negative 35° Trigon inserts

Dimensions (mm)			
06	9.52	4.76	0.4-1.2
08	12.7	4.76	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
WNMG08	080408		0.15-0.50	0.8-4.0							●	○	○	●											
	080408	BM	0.15-0.50	1.0-4.0												●		○							
	080408	CQ	0.17-0.50	0.8-4.0					●	○															
	080408	CR	0.18-0.50	1.0-4.5													●	●	●		○	●	○		
	080408	FQ	0.15-0.50	0.8-3.5	●																				
	080408	GH	0.17-0.50	1.0-4.0							○			○	●										
	080408	GM	0.15-0.50	1.0-4.0						●	●		●				○		○						
	080408	GR	0.17-0.50	0.8-4.0						○	○		○				○								
	080408	HA	0.15-0.50	0.5-4.0																					●
	080408	MS	0.12-0.50	1.0-4.5	●																				
	080408	NN	0.12-0.50	1.0-4.5															●						
	080408	PK	0.12-0.50	1.0-4.5					●																
	080408	PR	0.12-0.50	1.0-4.5					●																
	080408	TM	0.15-0.50	0.8-4.0				●	○	○															
	080408	UC	0.12-0.50	1.0-4.0							○			○	●										
	080408	XM	0.15-0.50	1.0-4.5					●																

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE



WNMG

Negative 35° Trigon inserts

Dimensions (mm)			
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.4-1.2

TURNING

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
WNMG08	080412	AW	0.20-0.50	0.8-4.5									●	○	○	●										
	080412	BM	0.20-0.50	0.8-4.5														●		●						
	080412	CQ	0.20-0.50	1.0-4.5					●	○																
	080412	CR	0.18-0.50	1.0-4.5														●	●	○		○	●	○		
	080412	GF	0.20-0.50	0.8-4.0							○															
	080412	GM	0.17-0.50	1.0-4.5							●	○		○												
	080412	GH	0.20-0.50	1.0-4.5									○			●										
	080412	GR	0.20-0.50	1.2-4.5								●		●												
	080412	NN	0.18-0.50	1.0-4.5																●						
	080412	NR	0.20-0.50	1.0-4.5																				●		
	080412	PK	0.18-0.50	0.8-4.5					●																	
	080412	PR	0.20-0.50	0.5-4.5					●																	
	080412	SM	0.18-0.50	0.8-4.5																		●	○	○		
	080412	TM	0.15-0.40	0.8-4.0				●	○	○																
	080412	UC	0.15-0.50	1.0-4.5									○		○	●										
	080412	XM	0.20-0.55	1.0-4.5						●																
WNMA	080404		0.15-0.50	0.8-4.0									●	○	○	●										
	080408		0.17-0.50	0.8-4.0									●	●	●	●										
	080412		0.20-0.50	0.8-4.5									●	●	●	●										

UNC = Uncoated

● STOCKABLE ○ NON STOCKABLE