NEW PRODUCT NEWS

MEGA TECH
METAL WORK CO.,LTD

Tungaloy Report No. 555-G

Turning tool

Non-Ferrous Application Series

Tungaloy's complete turning solutions for non-ferrous materials with ultimate stability and productivity

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH
METAL WORK CO.,LTD

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH
METAL WORK CO.,LTD

Non-Ferrous Application Series

The ultimate tools for high speed machining of non-ferrous alloys.
Chip nesting is a thing of the past.

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH METAL WORK CO.,LTD

Non-Ferrous Application Series

Complete turning solutions for non-ferrous materials

Introducing wear-resistant DX160 grade inserts with NS chipbreaker

PCD inserts with 3D chipbreaker

NS

New

DX110, **DX160**

PCD (polycrystalline diamond) tipped inserts

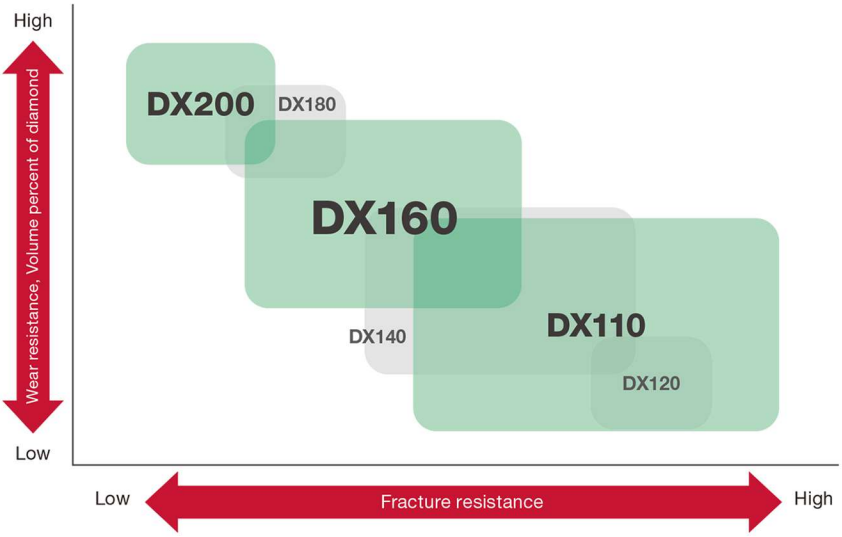
DX110, DX120, DX140
DX160, DX200

Cemented carbide inserts with chipbreaker for non-ferrous alloy

AL/28/P/JP/JS

KS05F, TH10

PCD grades and applications



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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

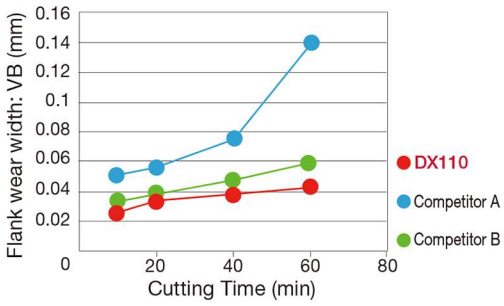
MEGA TECH METAL WORK CO.,LTD

PCD-tipped inserts
DX110

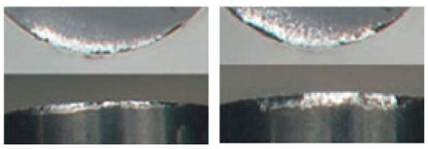
Definitive insert series for high speed machining of aluminum alloys

- Ultra-fine grained PCD grade for edge sharpness
- An extremely wear-resistant grade, featuring strongly-bonded diamond grains that prevents the grains from breaking off during machining
- Thanks to ultra-fine diamond grains, **DX110** provides superior surface finish

■ Wear resistance



After 60 min

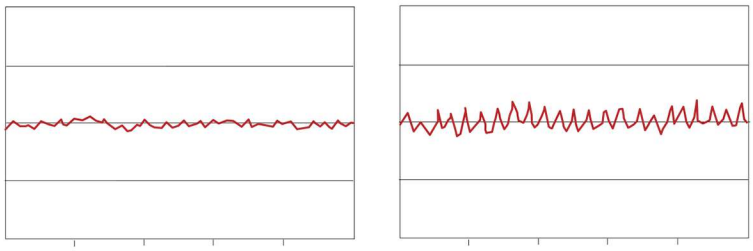


DX110 Competitor A

Insert : 1QP-CNMM120404 **DX110**
Workpiece material : Aluminum alloy (Si: 17%)
Holder : ACLNL2525M12-A
Cutting speed : *Vc* = 500 m/min
Feed : *f* = 0.1 mm/rev
Depth of cut : *ap* = 0.5 mm
Coolant : Dry

DX110 exhibited excellent wear resistance in machining extremely abrasive Si-Al alloy.

■ Surface finish



DX110 Competitor

Insert : 1QP-CNMM120404 **DX110**
Workpiece material : Aluminum alloy (Si:10%)
Cutting speed : *Vc* = 500 m/min
Feed : *f* = 0.05 mm/rev
Depth of cut : *ap* = 0.3 mm
Coolant : Wet

Submicron grain PCD grade **DX110** insert with optimized rake angle provides excellent surface finish.

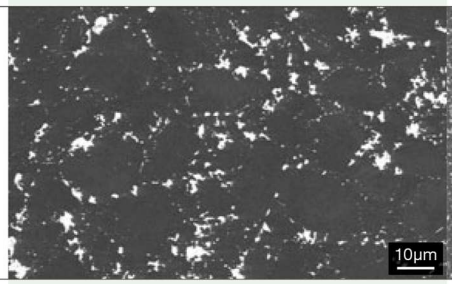
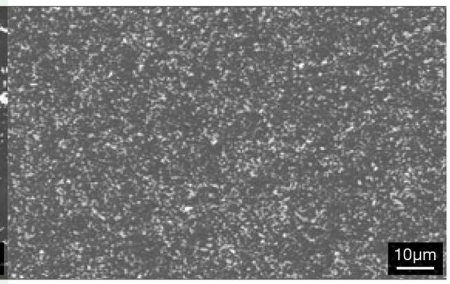
MEGA TECH METAL WORK CO.,LTD

Non-Ferrous Application Series

PCD-tipped inserts
DX160

High diamond-content PCD grade for superior wear resistance

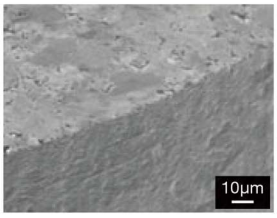
- A coarse diamond grain grade, **DX160** contains a high volume percent of diamond, which exceeds the fine-grained DX110, for superior wear resistance.
- Suited for various non-ferrous applications including a wide range of Aluminium and Copper alloys, as well as hard, brittle materials such as Tungsten.

Grade	DX160	DX110
Microstructure		
Grain size (µm)	28	< 1
Hardness (Hv)	11,000	8,500
Application	High wear resistance	High fracture resistance

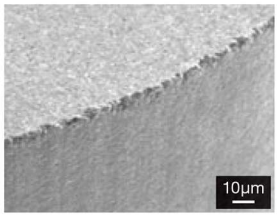
Superior cutting edge sharpness and integrity

DX160 grade inserts, with its high hardness, boast a sharp cutting edge that retains its sharpness longer than competitors' submicron-grain PCD grades. This contributes to the creation of unparalleled part surface quality and process security in all non-ferrous applications.

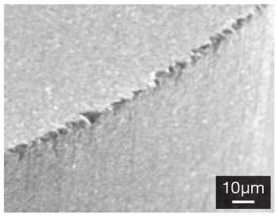
Cutting edge shape



DX160



Submicron grain grade A



Submicron grain grade B

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH METAL WORK CO.,LTD

PCD-tipped inserts
DX200

Sharp cutting edge

DX200 has a sharp cutting edge that provides excellent surface finish.

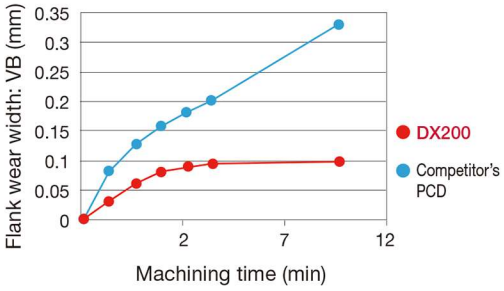
Cutting edge shape

DX200

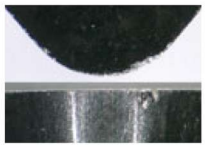
Conventional PCD grade

Cutting performance

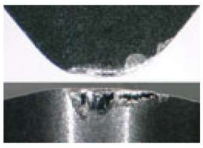
Wear resistance



After 10 min



DX200



Competitor's PCD

N

Insert : 1QP-DCGW11T304F DX200
Workpiece material : Tungsten carbide (85HRA)
Toolholder : SDJCL2525M11
Cutting speed : *Vc* = 20 m/min
Feed : *f* = 0.1 mm/rev
Depth of cut : *ap* = 0.1 mm
Coolant : Wet

DX200 provides better wear resistance than competitor's PCD grade.

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH METAL WORK CO.,LTD

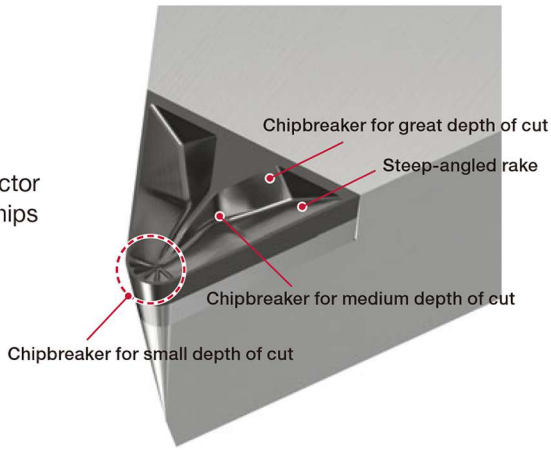
Non-Ferrous Application Series

PCD inserts with 3D chipbreaker
NS

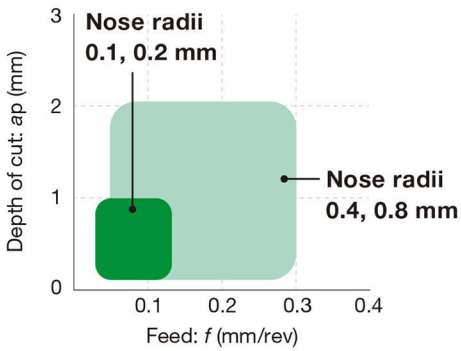
No more chip nesting in aluminum alloy machining

Unique 3D chipbreaker

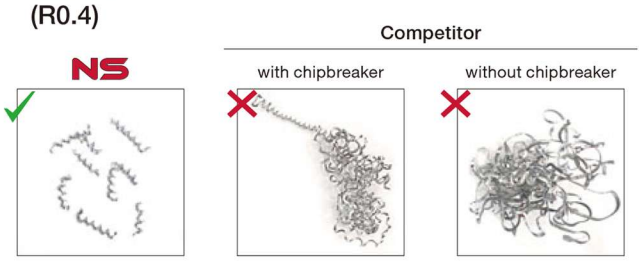
- Versatile geometry allows excellent chip control
- One insert handles from rough to finish operations
- Optimal rake angle design effectively directs chips to the redirector
- Optimized geometry for small nose radii to effectively control chips
- Excellent chipbreaking in varying depths of cut



■ Recommended application ranges for NS chipbreaker



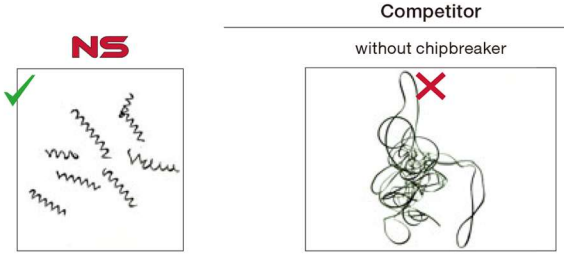
■ Chip control (R0.4)



N

Insert : 1QP-DCGT11T304-**NS**
Holder : SDJCL2525M11
Workpiece material : A5056
Cutting speed : *Vc* = 1,000 m/min
Feed : *f* = 0.1 mm/rev
Depth of cut : *ap* = 0.5 mm
Application : External turning, continuous cut
Coolant : Wet

■ Chip control (R0.2)



N

Insert : 1QP-VCGT160402-**NS**
Toolholder : SVJCR2525M16
Workpiece material : A6061 / AlMg1SiCu
Cutting speed : *Vc* = 500 m/min
Feed : *f* = 0.08 mm/rev
Depth of cut : *ap* = 0.5 mm
Application : External turning,continuous cut
Coolant : Wet

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

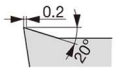
MEGA TECH METAL WORK CO.,LTD

Fine-grained cemented carbide inserts with chipbreaker for non-ferrous alloy

AL/28/P

No more chip nesting in aluminum alloy and copper alloy machining

For positive insert

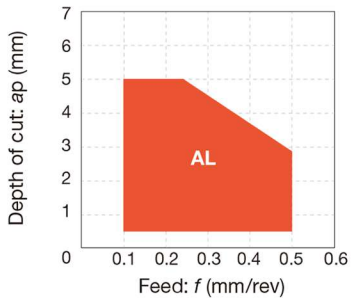


First-choice geometry for non-ferrous applications

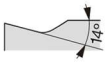
AL

- Provides excellent chip control and resistance to wear and built-up edge
- Low cutting forces generated by a large rake angle and sharp cutting edge
- 3D geometry with lapped rake face
- Superb chip control enabled by large inclination angle of the cutting edge
- Available on 26 total inserts, including CCGT, DCGT, RCGT, TCGT, and VCGT inserts

■ Chip control range



For negative insert

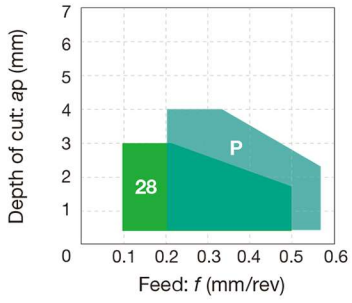


Press-in chipbreaker ideal for medium to finish operations

28

- Versatile geometry with a large inclination angle of the cutting edge. Ideal for medium to finish operations
- Provides superior surface finish and chip control

■ Chip control range



■ Chip control

N

Insert : CNGG120404-**28**
Workpiece material : A6061
Cutting speed : *Vc* = 500 m/min
Feed : *f* = 0.2 mm/rev
Depth of cut : *ap* = 1 mm
Application : External turning, continuous cut
Coolant : Wet

N

Insert : CNGG120404-**28**
Workpiece material : A6061
Cutting speed : *Vc* = 500 m/min
Feed : *f* = 0.3 mm/rev
Depth of cut : *ap* = 2 mm
Application : External turning, continuous cut
Coolant : Wet

28 chipbreaker provides excellent chip control in wide range of applications.

Linear chipbreaker

P

Provides process security across a wide range of applications

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

Tungaloy Report No. 555-G

MEGA TECH METAL WORK CO.,LTD

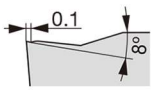
Non-Ferrous Application Series

Pressed 3D chipbreaker inserts for small parts machining
JP/JS

Full lineup of chipbreakers for unrivaled chip control and super surface finishing

First choice chipbreaker for high precision finishing

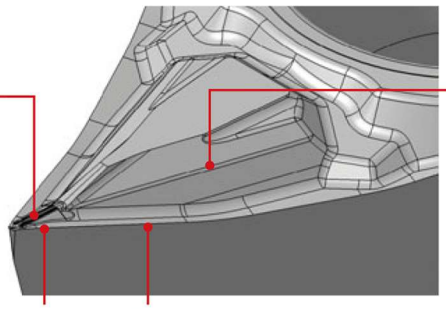
JP



Eliminates chip nesting and other chip-associated issues that impede the shop's productivity and provides stable chip breaking over a wide range of feed rates and D.O.C.

- Effective chip breaking for high part quality
- Versatile geometry designed for a broad application range
- Eliminates burr generation and controls vibration during large depth of cut

A protrusion extending towards the nose radius
Provides excellent chip control in finish to precision finish cutting



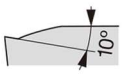
Secondary rake with multiple facets
Guides and redirects chips generated during machining at large depth of cut

Cutting edge with a steep inclination angle
- For better chip evacuation
- For reduced cutting force

Primary rake with variable angles
Controls the generation of burrs and vibration when machining at a large depth of cut capability

First choice chipbreaker for finish cutting

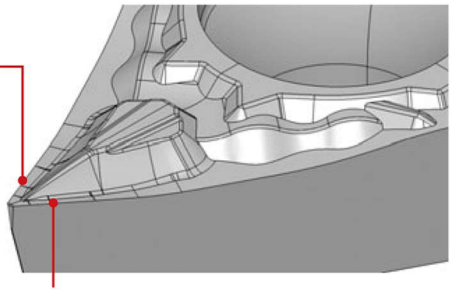
JS



Chipbreaker geometry that allows light cutting action and excellent chip breaking

- A steep cutting edge inclination angle for better chip control and reduced cutting force
- A unique protrusion that extends towards the radius effectively controls chip flow from small to large depth of cut

Cutting edge with a steep inclination angle
Provides good chip evacuation and reduced cutting force



Rake with variable angles and steep protrusion
Provides stable chip control in the small to large depth of cut range and also maintains cutting edge integrity and sharpness over extended period of time

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TUNGALOY ADDFORCE ACCELERATED LINES

NEW PRODUCT NEWS

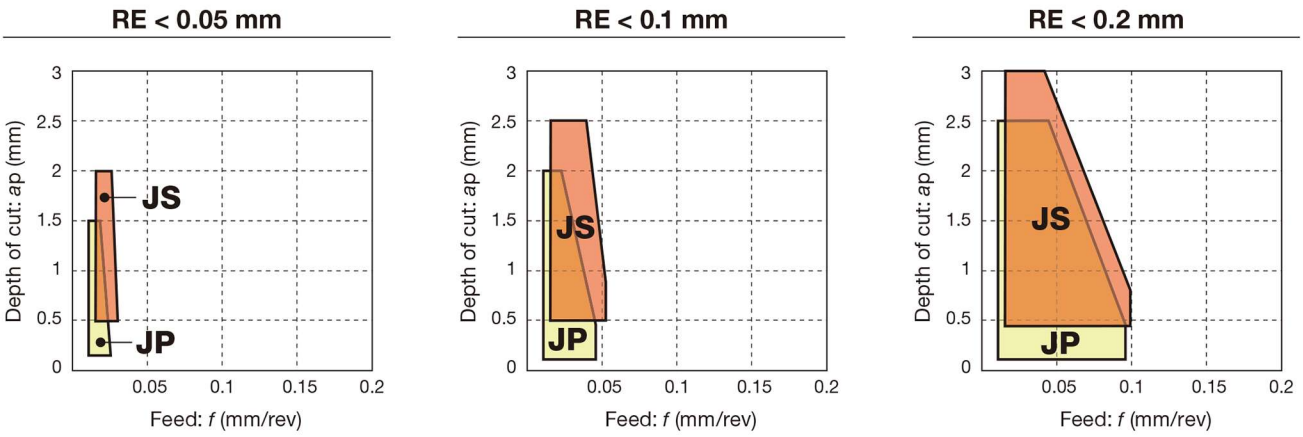
Tungaloy Report No. 555-G

MEGA TECH METAL WORK CO.,LTD

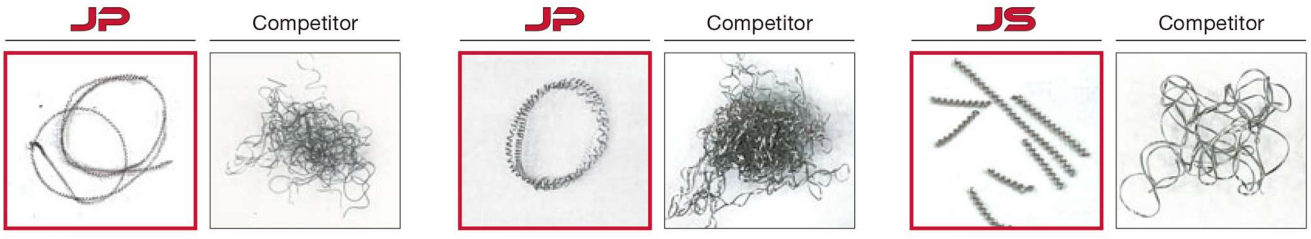
KS05F N

- Sub-micron grain cemented carbide with balanced wear and impact resistance
- Homogeneous fine-grained structure provides excellent resistance to wear, fracture, and built-up edge
- The rake face features a mirror finish that provides the cutting edge with built-up edge resistance

■ Chip control range



■ Chip control



N

Insert : DCGT11T0302MF-JP KS05F
Workpiece material: A6061 / AlMg1SiCu
Cutting speed : *Vc* = 300 m/min
Feed : *f* = 0.025 mm/rev
Depth of cut : *ap* = 0.1 mm
Coolant : Wet

N

Insert : DCGT11T302MF-JP KS05F
Workpiece material: A5052
Cutting speed : *Vc* = 300 m/min
Feed : *f* = 0.05 mm/rev
Depth of cut : *ap* = 0.25 mm
Coolant : Wet

N

Insert : DCGT11T0304MF-JS KS05F
Workpiece material: A6061 / AlMg1SiCu
Cutting speed : *Vc* = 300 m/min
Feed : *f* = 0.15 mm/rev
Depth of cut : *ap* = 1 mm
Coolant : Wet

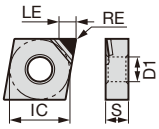
Non-Ferrous Application Series

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Chipbreaker	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)	Depth of cut *ap* (mm)
N	Aluminum alloys (Si ≤ 12%)	NS	DX110, DX160	300 - 2500	0.03 - 0.3	0.1 - 2
		Without	DX110, DX120, DX140, DX160	300 - 2500	0.05 - 0.2	0.05 - 2
		AL	KS05F	100 - 1200	0.1 - 0.5	0.5 - 5
		28	KS05F	100 - 1200	0.1 - 0.5	0.5 - 3
		P	TH10	100 - 1000	0.2 - 0.5	0.5 - 4
		JP	KS05F	100 - 1200	0.02 - 0.1	0.05 - 2.5
		JS	KS05F	100 - 1200	0.02 - 0.2	0.5 - 3
	Aluminum alloys (Si ≥ 12%)	NS	DX110, DX160	300 - 800	0.03 - 0.2	0.1 - 2
		Without	DX110, DX120, DX140, DX160	300 - 800	0.05 - 0.2	0.05 - 2
		Without	DX120	400 - 800	0.05 - 0.2	0.05 - 2
		Without	DX140	400 - 800	0.05 - 0.2	0.05 - 2
		Without	DX160	400 - 800	0.05 - 0.2	0.05 - 2
		AL	KS05F	100 - 300	0.1 - 0.5	0.5 - 5
		28	KS05F	100 - 300	0.1 - 0.5	0.5 - 3
		P	TH10	100 - 300	0.2 - 0.5	0.5 - 4
		JP	KS05F	100 - 1200	0.02 - 0.1	0.05 - 2.5
		JS	KS05F	100 - 300	0.02 - 0.2	0.5 - 3
	Copper and copper alloys	NS	DX110, DX160	300 - 1500	0.03 - 0.3	0.1 - 2
		Without	DX110, DX120, DX140, DX160	300 - 1500	0.05 - 0.2	0.05 - 2
		AL	KS05F	100 - 300	0.1 - 0.5	0.5 - 5
		28	KS05F	100 - 300	0.1 - 0.5	0.5 - 3
		P	TH10	100 - 300	0.2 - 0.5	0.5 - 4
		JP	KS05F	100 - 300	0.02 - 0.1	0.05 - 2.5
		JS	KS05F	100 - 300	0.02 - 0.2	0.5 - 3
	Magnesium alloys	Without	DX110, DX120, DX140, DX160	400 - 1200	0.05 - 0.2	0.05 - 1
	FRP	Without	DX160, DX200	500 - 1000	0.05 - 0.3	0.1 - 1
	CFRP	Without	DX160, DX200	100 - 700	0.05 - 0.3	0.1 - 1
	Carbon	Without	DX160, DX200	300 - 500	0.05 - 0.3	0.1 - 1
	Green ceramics	Without	DX160, DX200	100 - 200	0.02 - 0.1	0.1 - 1
	Tungsten carbide (HRA80 - 95)	Without	DX160, DX200	5 - 30	0.02 - 0.1	0.02 - 0.2
	Sputtering targets for semiconductor	Without	DX200	10 - 100	0.02 - 0.1	0.02 - 0.2

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



IC : 12.7 mm
D1 : 5.16 mm
S : 4.76 mm

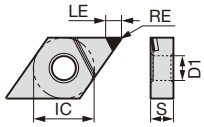
80°Rhombic with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX110 ●ɔ	DX120 ●ɔ	DX140 ●ɔ	DX160 ●ɔ
Finishing	1QP-CNMM120402	0.2	2.8	1	○	●			
	1QP-CNMM120402F		2.6	1	○				●
	CNMM120402-DIA		3.5	1	○		●		
	1QP-CNMM120404	0.4	2.8	1	○	●			
	1QP-CNMM120404F		2.6	1	○				●
	CNMM120404-DIA		3.5	1	○		●		
	CNGA120404-DIA		3.5	1				●	
	1QP-CNMM120408F	0.8	2.5	1	○				●
	CNGA120408-DIA		2.8	1				●	
	1QP-CNMM120412F	1.2	2.4	1	○				●

● : Line up

DN



IC : 12.7 mm
D1 : 5.16 mm
S : 4.76 mm

55° Rhombic with hole

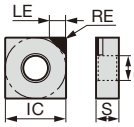
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●ɔ	DX140 ●ɔ	DX160 ●ɔ
Finishing	1QP-DNMM150402F	0.2	2.6	1	○			●
	DNMM150402-DIA		3.3	1	○	●		
	1QP-DNMM150404F	0.4	2.5	1	○			●
	DNMM150404-DIA		3.1	1	○	●		
	DNGA150404-DIA		3.1	1			●	●
	1QP-DNMM150408F	0.8	2.5	1	○			●
	DNGA150408-DIA		2.8	1			●	
	1QP-DNMM150412F	1.2	2.5	1	○			●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN



IC : 12.7 mm
D1 : 5.16 mm
S : 4.76 mm

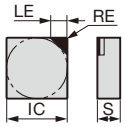
Square with hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140
Finishing	**SNGA120404-DIA**	0.4	3.6	1		●
Finishing	**SNGA120408-DIA**	0.8	3.6	1		●

● : Line up

SN



IC : 12.7 mm
S : 4.76 mm

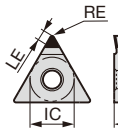
Square without hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140
Finishing	**SNGN120408-DIA**	0.8	3.6	1		●

● : Line up

TN



IC : 9.525 mm
D1 : 3.81 mm
S : 4.76 mm

Triangular with hole

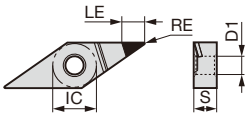
N Non-ferrous ●◐ ●◐ ●◐ ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160
Finishing	**1QP-TNMM160402**	0.2	2.7	1	○	●			
Finishing	**1QP-TNMM160402F**		2.6	1	○				●
Finishing	**TNMM160402-DIA**		3.3	1	○		●		
Finishing	**1QP-TNMM160404**	0.4	2.6	1	○	●			
Finishing	**1QP-TNMM160404F**		2.4	1	○				●
Finishing	**TNMM160404-DIA**		3.2	1	○		●		
Finishing	**TNGA160404-DIA**		3.2	1				●	●
Finishing	**1QP-TNMM160408F**	0.8	2.1	1	○				●
Finishing	**TNGA160408-DIA**		2.9	1				●	●

● : Line up

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

VN



IC : 9.525 mm
D1 : 3.81 mm
S : 4.76 mm

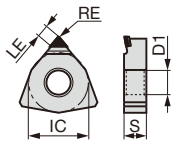
35° Rhombic with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●ᑕ	DX160 ●ᑕ
Finishing	1QP-VNMM160402F	0.2	2.5	1	○		●
	VNMM160402-DIA		4.8	1	○	●	
	1QP-VNMM160404F	0.4	2.3	1	○		●
	VNMM160404-DIA		4.4	1	○	●	
	1QP-VNMM160408F	0.8	2.1	1	○		●
	VNMM160408-DIA		3.6	1	○	●	
	1QP-VNMM160412F	1.2	2.1	1	○		●

● : Line up

WN



IC : 12.7 mm
D1 : 5.16 mm
S : 4.76 mm

80° Trigon with hole

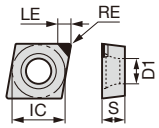
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160 ●ᑕ
Finishing	1QP-WNMM080402F	0.2	2.6	1	○	●
	1QP-WNMM080404F	0.4	2.6	1	○	●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

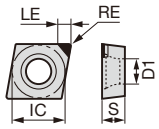
80°Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX200
Finishing	1QP-CCGW04T102F	0.2	1.7	1		●
	CCGW04T104F	0.4	1.6	1		●

● : Line up

CC



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

80°Rhombic Positive 7° with hole

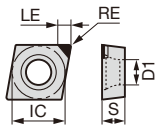
N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160	DX200
Finishing	CCGW060200-DIA	0.05	2.4	1				●		
	1QP-CCGT060201-NS	0.1	3.1	1	○	●				
	1QP-CCMT060202F	0.2	2	1	○				●	
	CCMT060202-DIA		2.4	1	○		●			
	1QP-CCGT060202-NS		3.1	1	○	●			●	
	1QP-CCGW060202F		3.5	1						●
	CCGW060202-DIA		2.4	1				●		
	1QP-CCGT060204-NS	0.4	3.1	1	○	●			●	
	1QP-CCMT060204		2.4	1	○	●				
	1QP-CCMT060204F		2.1	1	○				●	
	CCMT060204-DIA		2.4	1	○		●			
	1QP-CCGW060204F		3	1						●
	CCGW060204-DIA		2.4	1				●		

● : New product
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



IC : 9.525 mm
D1 : 4.4 mm
S : 3.97 mm

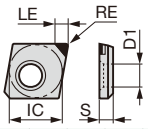
80°Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160	DX200
Finishing	1QP-CCGT09T301-NS	0.1	3.1	1	○	●				
	1QP-CCMT09T302F	0.2	2.1	1	○				●	
	CCMT09T302-DIA		2.4	1	○		●			
	1QP-CCGT09T302-NS		3.1	1	○	●			●	
	1QP-CCGW09T302F		3	1						●
	CCGW09T302-DIA		3.5	1				●		
	1QP-CCGT09T304-NS	0.4	3.1	1	○	●			●	
	1QP-CCMT09T304		2.4	1	○	●				
	1QP-CCMT09T304F		2.1	1	○				●	
	CCMT09T304-DIA		2.4	1	○		●			
	1QP-CCGW09T304F		3	1						●
	CCGW09T304-DIA		3.5	1				●	●	
	1QP-CCMT09T308F		2	1	○				●	
	1QP-CCGT09T308-NS	0.8	3	1	○	●			●	
	CCGW09T308-DIA		3.4	1				●		

● : New product
● : Line up

CP



IC : 9.525 mm
D1 : 4 mm
S : 2.38 mm

80° Rhombic Positive 11° with hole

N Non-ferrous

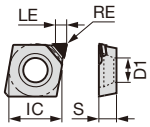
Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140
Finishing	CPGA090202-DIA	0.2	2.4	1		●
	CPGA090204-DIA	0.4	2.4	1		●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

CP



IC : 9.525 mm
D1 : 4.4 mm
S : 3.18 mm

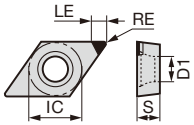
80° Rhombic Positive 11° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-CPMT090302F	0.2	2	1	○	●
	1QP-CPMT090304F	0.4	2	1	○	●
	1QP-CPMT090308F	0.8	1.9	1	○	●

● : Line up

DC



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

55° Rhombic Positive 7° with hole

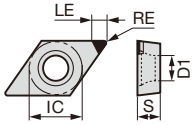
N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160	DX200
Finishing	DCGW070200-DIA	0.05	2.4	1				●		
	1QP-DCGT070201-NS	0.1	3.3	1	○	●				
	1QP-DCGT070202-NS	0.2	3.2	1	○	●			●	
	1QP-DCMT070202F		2.5	1	○				●	
	DCMT070202-DIA		2.3	1	○		●			
	1QP-DCGW070202F		3	1						●
	DCGW070202-DIA		2.3	1			●	●		
	1QP-DCGT070204-NS	0.4	3	1	○	●			●	
	1QP-DCMT070204F		2.5	1	○				●	
	DCMT070204-DIA		2.1	1	○		●			
	1QP-DCGW070204F		3	1						●
	DCGW070204-DIA		2.1	1				●		

● : New product
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC



IC : 9.525 mm
D1 : 4.4 mm
S : 3.97 mm

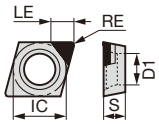
55° Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110 ●◐	DX120 ●◐	DX140 ●◐	DX160 ●◐	DX200 ●◐
Finishing	1QP-DCGT11T301-NS	0.1	3.3	1	○	●				
	1QP-DCGT11T302-NS	0.2	3.2	1	○	●			●	
	1QP-DCMT11T302F		2.6	1	○				●	
	DCMT11T302-DIA		3.2	1	○		●			
	1QP-DCGW11T302F		3	1						●
	DCGW11T302-DIA		3.2	1				●		
	1QP-DCGT11T304-NS	0.4	3	1	○	●			●	
	1QP-DCMT11T304F		2.4	1	○				●	
	DCMT11T304-DIA		3	1	○		●			
	1QP-DCGW11T304F		3	1						●
	DCGW11T304-DIA		3	1				●		
	1QP-DCGW11T308F	0.8	4	1						●
	1QP-DCMT11T308F		2.4	1	○				●	
	1QP-DCGT11T308-NS		3	1	○	●			●	
	DCGW11T308-DIA		2.7	1				●		

● : New product
● : Line up

EP



IC : 3.97 mm
D1 : 2.3 mm
S : 1.59 mm

75° Rhombic Positive 11° with hole

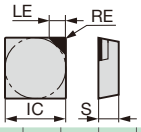
N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	EPGW040102-DIA	0.2	2	1		●
	EPGW040104-DIA	0.4	1.9	1		●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP



IC : 9.525 mm
S : 3.18 mm

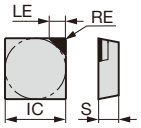
Square Positive 11° without hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140
Finishing	SPGN090308-DIA	0.8	3.6	1		●

● : Line up

SP



IC : 12.7 mm
S : 3.18 mm

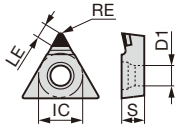
Square Positive 11° without hole

N Non-ferrous ●◐ ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX140	DX160
Finishing	SPGN120302-DIA	0.2	3.6	1		●	
	SPGN120304-DIA	0.4	3.6	1		●	
	SPGN120308-DIA	0.8	3.6	1		●	●

● : Line up

TC



IC : 4.76 mm
D1 : 2.7 mm
S : 2.38 mm

Triangular Positive 7° with hole

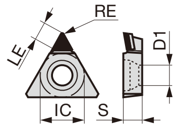
N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX120
Finishing	TCMT080202-DIA	0.2	2.2	1	○	●
	TCMT080204-DIA	0.4	2	1	○	●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✤ : Heavy interrupted cutting

TC



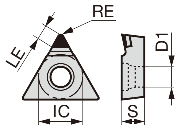
IC : 5.56 mm
D1 : 2.58 mm
S : 2.38 mm

Triangular Positive 7° with hole

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX110	DX160
N Non-ferrous						●◐	●◐
Finishing	1QP-TCGT090202-NS	0.2	3.1	1	○	●	★
	1QP-TCMT090202F		2.3	1	○		●
	New 1QP-TCGT090204-NS	0.4	3	1	○		★
	1QP-TCMT090204F		2.2	1	○		●

★: Will be released in April 2025
●: Line up

TC



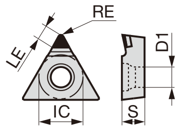
IC : 6.35 mm
D1 : 2.86 mm
S : 2.38 mm

Triangular Positive 7° with hole

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
N Non-ferrous						●◐
Finishing	New 1QP-TCGT110202-NS	0.2	3.1	1	○	★
	New 1QP-TCGT110204-NS	0.4	3	1	○	★

★: Will be released in April 2025

TC



IC : 9.525 mm
D1 : 4.4 mm
S : 3.97 mm

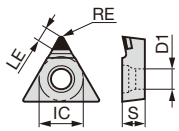
Triangular Positive 7° with hole

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
N Non-ferrous						●◐
Finishing	New 1QP-TCGT16T304-NS	0.4	3	1	○	★
	New 1QP-TCGT16T308-NS	0.8	3.1	1	○	★

★: Will be released in April 2025

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

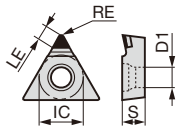
Triangular Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	●◐ DX120	●◐ DX160
Finishing	1QP-TCMT110202F	0.2	2.3	1	○		●
	TCMT110202-DIA		2.4	1	○	●	
	1QP-TCMT110204F	0.4	2.2	1	○		●
	TCMT110204-DIA		2.2	1	○	●	

● : Line up

TC



IC : 6.35 mm
D1 : 2.8 mm
S : 3.18 mm

Triangular Positive 7° with hole

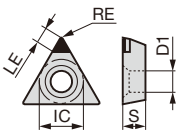
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	●◐ DX110	●◐ DX120
Finishing	TCMT110302-DIA	0.2	2.4	1	○		●
	1QP-TCMT110304	0.4	2.2	1	○	●	
	TCMT110304-DIA		2.2	1	○		●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 5.56 mm
D1 : 2.5 mm
S : 2.38 mm

Triangular Positive 11° with hole

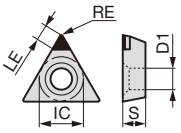
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	**TPGA090202-DIA**	0.2	2.4	1		●
	TPGA0902**04-DIA**	0.4	2.2	1		●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

TP



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

Triangular Positive 11° with hole

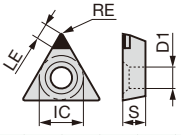
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	**TPGA110202-DIA**	0.2	2.4	1		●
	TPGA1102**04-DIA**	0.4	2.2	1		●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

TP



IC : 6.35 mm
D1 : 3 mm
S : 3.18 mm

Triangular Positive 11° with hole

N Non-ferrous

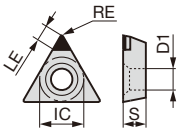
Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	**TPGA110302-DIA**	0.2	2.4	1		●
	TPGA1103**04-DIA**	0.4	2.2	1		●
	TPGA1103**08-DIA**	0.8	2.9	1		●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 4.76 mm
D1 : 2.3 mm
S : 2.38 mm

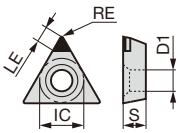
Triangular Positive 11° with hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	New 1QP-TPGT080202-NS	0.2	2.7	1	○	★
	New 1QP-TPGT080204-NS	0.4	2.6	1	○	★

★: Will be released in April 2025

TP



IC : 5.56 mm
D1 : 2.58 mm
S : 2.38 mm

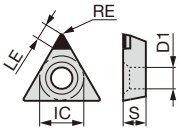
Triangular Positive 11° with hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	New 1QP-TPGT090202-NS	0.2	3.1	1	○	★
	New 1QP-TPGT090204-NS	0.4	3	1	○	★

★: Will be released in April 2025

TP



IC : 6.35 mm
D1 : 3.4 mm
S : 3.18 mm

Triangular Positive 11° with hole

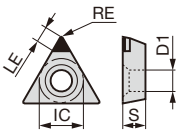
N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	New 1QP-TPGT110302-NS	0.2	3.1	1	○	★
	New 1QP-TPGT110304-NS	0.4	3	1	○	★

★: Will be released in April 2025

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



IC : 9.525 mm
D1 : 4 mm
S : 3.18 mm

Triangular Positive 11° with hole

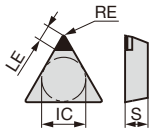
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	TPGA160302-DIA	0.2	3.3	1		●
	TPGA160304-DIA	0.4	3.2	1		●
	TPGA160308-DIA	0.8	2.9	1		●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

TP



IC : 5.56 mm
S : 2.38 mm

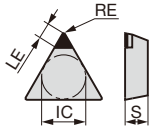
Triangular Positive 11° without hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	TPGN090204-DIA	0.4	2.2	1		●

● : Line up

TP



IC : 6.35 mm
S : 3.18 mm

Triangular Positive 11° without hole

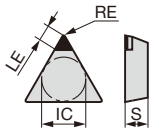
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●◐	DX140 ●◐
Finishing	TPGN110304-DIA	0.4	3.2	1		●	●
	TPGN110308-DIA	0.8	2.9	1			●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 9.525 mm
S : 3.18 mm

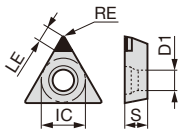
Triangular Positive 11° without hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●◐	DX140 ●◐
Finishing	TPGN160302-DIA	0.2	3.3	1			●
	TPGN160304-DIA	0.4	3.2	1		●	●
	TPGN160308-DIA	0.8	2.9	1			●

● : Line up

TP



IC : 4.76 mm
D1 : 2.3 mm
S : 2.38 mm

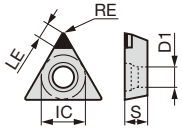
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	TPGW080202-DIA	0.2	2.4	1		●
	TPGW080204-DIA	0.4	2.3	1		●

● : Line up

TP



IC : 5.56 mm
D1 : 2.5 mm
S : 2.38 mm

Triangular Positive 11° with hole

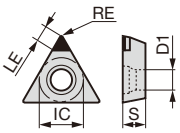
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●◐	DX140 ●◐
Finishing	TPGW090202-DIA	0.2	2.4	1		●	●
	TPGW090204-DIA	0.4	2.2	1			●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

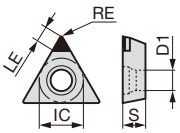
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●◐	DX140 ●◐
Finishing	**TPGW110202-DIA**	0.2	2.4	1		●	●
	TPGW1102**04-DIA**	0.4	2.2	1			●

● : Line up

TP



IC : 7.94 mm
D1 : 3.4 mm
S : 3.18 mm

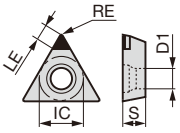
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX120 ●◐	DX140 ●◐
Finishing	**TPGW130302-DIA**	0.2	3.3	1		●	●
	TPGW1303**04-DIA**	0.4	3.2	1			●

● : Line up

TP



IC : 9.525 mm
D1 : 4.4 mm
S : 3.97 mm

Triangular Positive 11° with hole

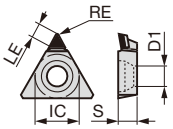
N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX140 ●◐
Finishing	**TPGW16T302-DIA**	0.2	3.3	1		●
	TPGW16T3**04-DIA**	0.4	3.2	1		●
	TPGW16T3**08-DIA**	0.8	2.9	1		●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



IC : 4.76 mm
D1 : 2.3 mm
S : 2.38 mm

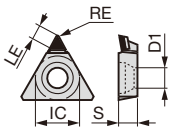
Triangular Positive 11° with hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-TPMT080202F	0.2	1.8	1	○	●
Finishing	1QP-TPMT080204F	0.4	1.7	1	○	●

● : Line up

TP



IC : 5.56 mm
D1 : 2.58 mm
S : 2.38 mm

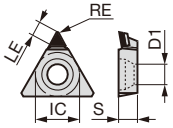
Triangular Positive 11° with hole

N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-TPMT090202F	0.2	1.8	1	○	●
Finishing	1QP-TPMT090204F	0.4	1.7	1	○	●

● : Line up

TP



IC : 6.35 mm
D1 : 3.4 mm
S : 3.18 mm

Triangular Positive 11° with hole

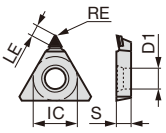
N Non-ferrous ●◐

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-TPMT110302F	0.2	2.3	1	○	●
Finishing	1QP-TPMT110304F	0.4	2.2	1	○	●

● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



IC : 9.525 mm
D1 : 4.5 mm
S : 3.18 mm

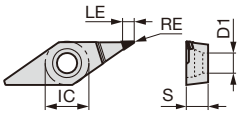
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-TPMH160302F	0.2	2.4	1		●
Finishing	1QP-TPMH160304F	0.4	2.3	1		●

● : Line up

VB



IC : 6.35 mm
D1 : 2.86 mm
S : 3.18 mm

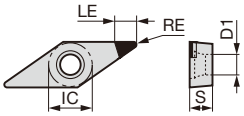
35° Rhombic Positive 5° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX160
Finishing	1QP-VBMT110302F	0.2	2.5	1	○	●
Finishing	1QP-VBMT110304F	0.4	2.3	1	○	●
Finishing	1QP-VBMT110308F	0.8	2.1	1	○	●

● : Line up

VB



IC : 9.525 mm
D1 : 4.4 mm
S : 4.76 mm

35° Rhombic Positive 5° with hole

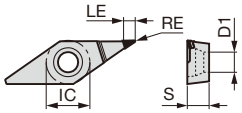
N Non-ferrous

Application	Designation	Dimension (mm) RE	Dimension (mm) LE	No. of corners	Chipbreaker	DX110	DX160
Finishing	1QP-VBGT160401-NS	0.1	2.8	1	○	●	
Finishing	1QP-VBMT160402F	0.2	2.5	1	○		●
Finishing	1QP-VBGT160402-NS		3.4	1	○	●	●
Finishing	1QP-VBGT160404-NS	0.4	3	1	○	●	●
Finishing	1QP-VBMT160404F		2.3	1	○		●
Finishing	1QP-VBGT160408-NS	0.8	3	1	○	●	●
Finishing	1QP-VBMT160408F		2.1	1	○		●

● : New product
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VC



IC : 4.76 mm
D1 : 2.3 mm
S : 2.38 mm

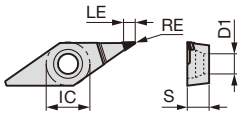
35° Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX110 ●◐	DX160 ●◐
Finishing	1QP-VCGT080202-NS	0.2	3.4	1	○	●	●
	1QP-VCMT080202F	0.2	2.5	1	○		●
	1QP-VCMT080204F	0.4	2.3	1	○		●
	1QP-VCMT080208F	0.8	2.1	1	○		●

● : New product
● : Line up

VC



IC : 6.35 mm
D1 : 2.86 mm
S : 3.18 mm

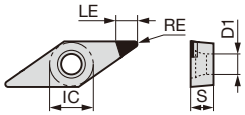
35° Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX110 ●◐	DX160 ●◐	DX200 ●◐
Finishing	1QP-VCGT110302-NS	0.2	3.4	1	○	●	●	
	1QP-VCMT110302F		2.5	1	○		●	
	1QP-VCGW110302F		3.4	1				●
	New 1QP-VCGT110304-NS	0.4	3	1	○		●	
	1QP-VCMT110304F		2.3	1	○		●	

● : New product
● : Line up

VC



IC : 9.525 mm
D1 : 4.4 mm
S : 4.76 mm

35° Rhombic Positive 7° with hole

N Non-ferrous

Application	Designation	Dimension (mm) RE	LE	No. of corners	Chipbreaker	DX110 ●◐	DX120 ●◐	DX140 ●◐	DX160 ●◐
Finishing	1QP-VCGT160401-NS	0.1	2.8	1	○	●			
	1QP-VCGT160402-NS	0.2	3.4	1	○	●			●
	1QP-VCMT160402F		2.5	1	○				●
	VCMT160402-DIA		4.8	1	○		●		
	VCGW160402-DIA		4.8	1				●	
	1QP-VCGT160404-NS		3	1	○	●			●
	1QP-VCMT160404F	0.4	2.3	1	○				●
	VCMT160404-DIA		4.4	1	○		●		
	VCGW160404-DIA		4.4	1				●	
	1QP-VCGT160408-NS		3	1	○	●			●
	1QP-VCMT160408F	0.8	2.1	1	○				●
	1QP-VCMT160412F	1.2	2.1	1	○				●

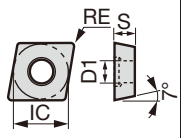
● : New product
● : Line up

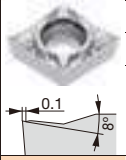
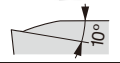
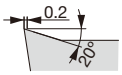
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC

Rhombic, 80° with hole Positive 7°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



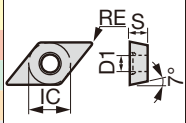
Application	Chipbreaker	Designation	Uncoated KS05F	RE	IC	S	D1
Precision finishing (sharp edge)	JP	CCGT09T300MF-JP	●	<0.05	9.525	3.97	4.4
		CCGT09T301MF-JP	●	<0.1	9.525	3.97	4.4
		CCGT09T302MF-JP	●	<0.2	9.525	3.97	4.4
Finishing (sharp edge)	JS	CCGT09T300MF-JS	●	<0.05	9.525	3.97	4.4
		CCGT09T301MF-JS	●	<0.1	9.525	3.97	4.4
		CCGT09T302MF-JS	●	<0.2	9.525	3.97	4.4
		CCGT09T304MF-JS	●	<0.4	9.525	3.97	4.4
							
Finishing to medium cutting	AL	CCGT060202-AL	●	0.2	6.35	2.38	2.8
		CCGT060204-AL	●	0.4	6.35	2.38	2.8
		CCGT09T302-AL	●	0.2	9.525	3.97	4.4
		CCGT09T304-AL	●	0.4	9.525	3.97	4.4
		CCGT09T308-AL	●	0.8	9.525	3.97	4.4
		CCGT120402-AL	●	0.2	12.7	4.76	5.5
		CCGT120404-AL	●	0.4	12.7	4.76	5.5
		CCGT120408-AL	●	0.8	12.7	4.76	5.5

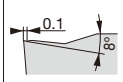
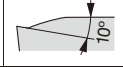
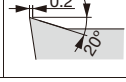
● : Line up

DC

Rhombic, 55° with hole Positive 7°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	RE	IC	S	D1
Precision finishing (sharp edge)	JP	DCGT11T300MF-JP	●	<0.05	9.525	3.97	4.4
		DCGT11T301MF-JP	●	<0.1	9.525	3.97	4.4
		DCGT11T302MF-JP	●	<0.2	9.525	3.97	4.4
							
Finishing (sharp edge)	JS	DCGT11T300MF-JS	●	<0.05	9.525	3.97	4.4
		DCGT11T301MF-JS	●	<0.1	9.525	3.97	4.4
		DCGT11T302MF-JS	●	<0.2	9.525	3.97	4.4
		DCGT11T304MF-JS	●	<0.4	9.525	3.97	4.4
							
Finishing to medium cutting	AL	DCGT070202-AL	●	0.2	6.35	2.38	2.8
		DCGT070204-AL	●	0.4	6.35	2.38	2.8
		DCGT11T302-AL	●	0.2	9.525	3.97	4.4
		DCGT11T304-AL	●	0.4	9.525	3.97	4.4
		DCGT11T308-AL	●	0.8	9.525	3.97	4.4
							

Corner radius (RE) with a sign of inequality (<) means minus tolerance.

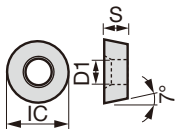
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

RC

Round, with hole Positive 7°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



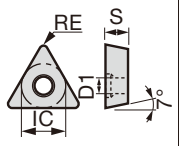
Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	AL	RCGT0602M0-AL	●	-	6	2.38	2.8
		RCGT0803M0-AL	●	-	8	3.18	3.4
		RCGT1003M0-AL	●	-	10	3.18	4.4

● : Line up

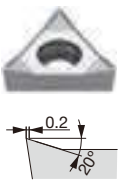
TC

Triangular, 60° with hole Positive 7°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	

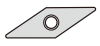


Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	AL	TCGT110202-AL	●	0.2	6.35	2.38	2.8
		TCGT110204-AL	●	0.4	6.35	2.38	2.8
		TCGT16T302-AL	●	0.2	9.525	3.97	4.4
		TCGT16T304-AL	●	0.4	9.525	3.97	4.4
		TCGT16T308-AL	●	0.8	9.525	3.97	4.4



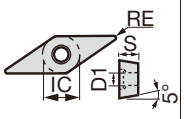
● : Line up

VB

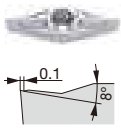


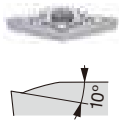
Rhombic, 35° with hole Positive 5°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Precision finishing (sharp edge)	JP	VBGT110300MF-JP	●	<0.05	6.35	3.18	2.8
		VBGT110301MF-JP	●	<0.1	6.35	3.18	2.8
		VBGT110302MF-JP	●	<0.2	6.35	3.18	2.8
Finishing (sharp edge)	JS	VBGT110300MF-JS	●	<0.05	6.35	3.18	2.8
		VBGT110301MF-JS	●	<0.1	6.35	3.18	2.8
		VBGT110302MF-JS	●	<0.2	6.35	3.18	2.8
		VBGT110304MF-JS	●	<0.4	6.35	3.18	2.8





Corner radius (RE) with a sign of inequality (<) means minus tolerance.

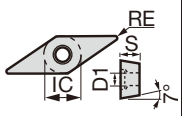
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

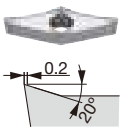
VC

Rhombic, 35° with hole Positive 7°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting	AL	VCGT160404-AL	●	0.4	9.525	4.76	4.4
		VCGT160408-AL	●	0.8	9.525	4.76	4.4
		VCGT160412-AL	●	1.2	9.525	4.76	4.4
		VCGT220520-AL	●	2	12.7	5.56	5.5
		VCGT220530-AL	●	3	12.7	5.56	5.5



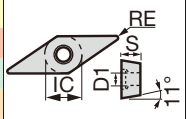
Dimension (mm)

● : Line up

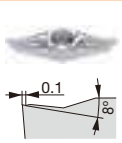
VP

35° Rhombic with hole Positive 11°

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	RE	IC	S	D1
Precision finishing (sharp edge)	JP	VPGT110300MF-JP	●	<0.05	6.35	3.18	2.8
		VPGT110301MF-JP	●	<0.1	6.35	3.18	2.8
		VPGT110302MF-JP	●	<0.2	6.35	3.18	2.8
Finishing (sharp edge)	JS	VPGT110300MF-JS	●	<0.05	6.35	3.18	2.8
		VPGT110301MF-JS	●	<0.1	6.35	3.18	2.8
		VPGT110302MF-JS	●	<0.2	6.35	3.18	2.8
		VPGT110304MF-JS	●	<0.4	6.35	3.18	2.8



Dimension (mm)

Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

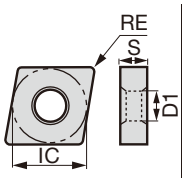
Tolerance

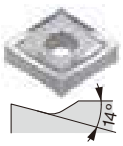
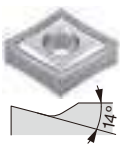
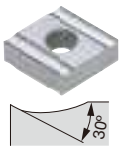
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel		●
M	Stainless		●
K	Cast iron	●	●
N	Non-ferrous	●	●
S	Superalloy	●	
H	Hard material		



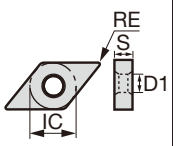
Application	Chipbreaker	Designation	Uncoated KS05F	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting (sharp edge)	28	CNGG120402-28	●		0.2	12.7	4.76	5.16
		CNGG120404-28	●		0.4	12.7	4.76	5.16
		CNGG120408-28	●		0.8	12.7	4.76	5.16
Finishing to medium cutting	28	CNMG120404-28	●		0.4	12.7	4.76	5.16
		CNMG120408-28	●		0.8	12.7	4.76	5.16
Medium cutting	P	CNGG120404R-P		●	0.4	12.7	4.76	5.16
		CNGG120404L-P		●	0.4	12.7	4.76	5.16
		CNGG120408R-P		●	0.8	12.7	4.76	5.16
		CNGG120408L-P		●	0.8	12.7	4.76	5.16

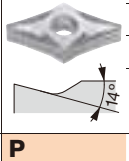
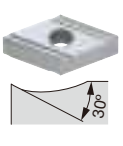
● : Line up

DN

Rhombic, 55° with hole

P	Steel		●
M	Stainless		●
K	Cast iron	●	●
N	Non-ferrous	●	●
S	Superalloy	●	
H	Hard material		



Application	Chipbreaker	Designation	Uncoated KS05F	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	28	DNMG150404-28	●		0.4	12.7	4.76	5.16
		DNMG150408-28	●		0.8	12.7	4.76	5.16
		DNMG150604-28	●		0.4	12.7	6.35	5.16
		DNMG150608-28	●		0.8	12.7	6.35	5.16
Medium cutting	P	DNGG150402R-P		●	0.2	12.7	4.76	5.16
		DNGG150402L-P		●	0.2	12.7	4.76	5.16
		DNGG150404R-P		●	0.4	12.7	4.76	5.16
		DNGG150404L-P		●	0.4	12.7	4.76	5.16
		DNGG150408R-P		●	0.8	12.7	4.76	5.16
		DNGG150408L-P		●	0.8	12.7	4.76	5.16

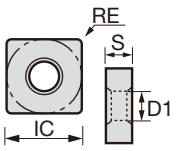
● : Line up

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	●
M	Stainless	●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



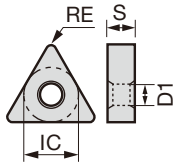
Application	Chipbreaker	Designation	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Medium cutting	P	SNGG090304R-P	●	0.4	9.525	3.18	3.81
		SNGG090304L-P	●	0.4	9.525	3.18	3.81
		SNGG090308R-P	●	0.8	9.525	3.18	3.81
		SNGG090308L-P	●	0.8	9.525	3.18	3.81
		SNGG120404R-P	●	0.4	12.7	4.76	5.16
		SNGG120404L-P	●	0.4	12.7	4.76	5.16
		SNGG120408R-P	●	0.8	12.7	4.76	5.16
		SNGG120408L-P	●	0.8	12.7	4.76	5.16

● : Line up

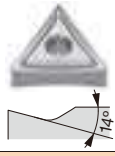
TN

Triangular, 60° with hole

P	Steel	●
M	Stainless	●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	

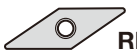


Application	Chipbreaker	Designation	Uncoated KS05F	TH10	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	28	TNMG160404-28	●		0.4	9.525	4.76	3.81
		TNMG160408-28	●		0.8	9.525	4.76	3.81
Medium cutting	P	TNGG160402R-P		●	0.2	9.525	4.76	3.81
		TNGG160402L-P		●	0.2	9.525	4.76	3.81
		TNGG160404R-P		●	0.4	9.525	4.76	3.81
		TNGG160404L-P		●	0.4	9.525	4.76	3.81
		TNGG160408R-P		●	0.8	9.525	4.76	3.81
		TNGG160408L-P		●	0.8	9.525	4.76	3.81



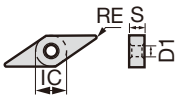
● : Line up

VN

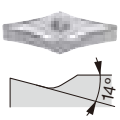


Rhombic, 35° with hole

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	28	VNMG160404-28	●	0.4	9.525	4.76	3.81
		VNMG160408-28	●	0.8	9.525	4.76	3.81



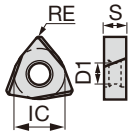
● : Line up

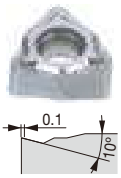
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

WX

Trigon, 80° with hole

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	TS	WXGU040302R-TS	●	0.2	6.35	3.18	2.7
		WXGU040302L-TS	●	0.2	6.35	3.18	2.7
		WXGU040304R-TS	●	0.4	6.35	3.18	2.7
		WXGU040304L-TS	●	0.4	6.35	3.18	2.7
		WXGU040308R-TS	●	0.8	6.35	3.18	2.7
		WXGU040308L-TS	●	0.8	6.35	3.18	2.7
Finishing (low cutting force)	SS	WXGU040302R-SS	●	0.2	6.35	3.18	2.7
		WXGU040302L-SS	●	0.2	6.35	3.18	2.7
		WXGU040304R-SS	●	0.4	6.35	3.18	2.7
		WXGU040304L-SS	●	0.4	6.35	3.18	2.7

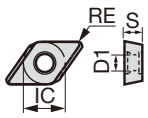
● : Line up

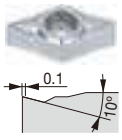
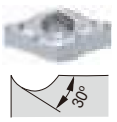
Related Items

DX

Rhombic, 55° with hole

P	Steel	
M	Stainless	
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	TS	DXGU070302R-TS	●	0.2	6.35	3.18	2.7
		DXGU070302L-TS	●	0.2	6.35	3.18	2.7
		DXGU070304R-TS	●	0.4	6.35	3.18	2.7
		DXGU070304L-TS	●	0.4	6.35	3.18	2.7
		DXGU070308R-TS	●	0.8	6.35	3.18	2.7
		DXGU070308L-TS	●	0.8	6.35	3.18	2.7
Finishing (low cutting force)	SS	DXGU070302R-SS	●	0.2	6.35	3.18	2.7
		DXGU070302L-SS	●	0.2	6.35	3.18	2.7
		DXGU070304R-SS	●	0.4	6.35	3.18	2.7
		DXGU070304L-SS	●	0.4	6.35	3.18	2.7

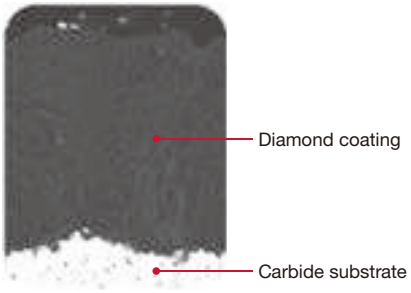
● : Line up

Related Items

Diamond-coated grade for non-ferrous applications

MFSMA

- Tungaloy's unique diamond coating using plasma-enhanced CVD process
- Diamond coating with extremely high hardness and wear resistance.
- Can be coated on all shapes and sizes of carbide tools. Available upon request



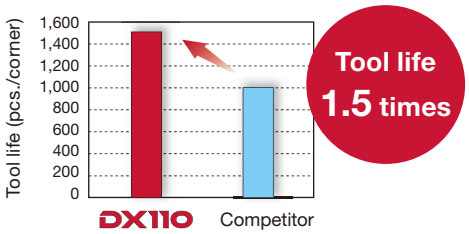
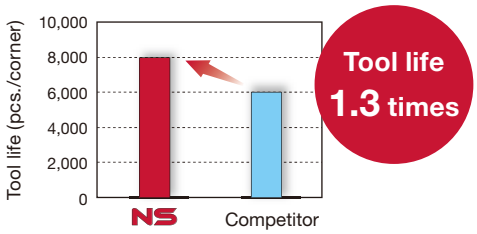
■ Grade properties

Application	Grade	Coating layer		
		Main composition	Thickness (μm)	Hardness (Hv)
N	MFSMA	Diamond	9	< 10,000

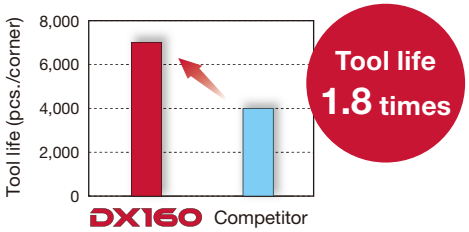
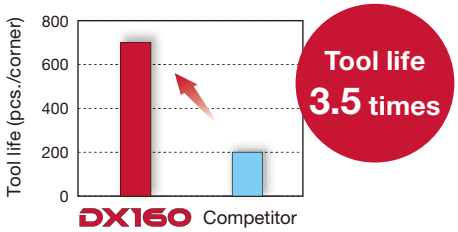
Customized inserts are available tailored to your specific application needs.

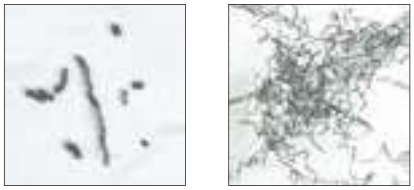
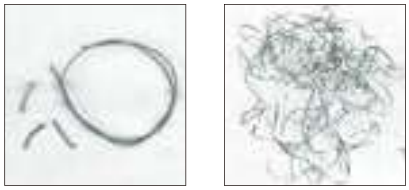
Non-Ferrous Application Series

PRACTICAL EXAMPLES

Workpiece type		Con-rods	Transmission parts
Insert		1QP-CCMT09T304	1QP-VCGT160404-NS
Grade		DX110	DX110
Workpiece material		Copper-based sintered alloy	A2011 / AlCu6BiPb
		 N	 N
Cutting conditions	Cutting speed : *Vc* (m/min)	300	1,400
	Feed : *f* (mm/rev)	0.05	0.08
	Depth of cut : *ap* (mm)	0.1	0.1
	Coolant	Wet	Wet
Results		 With its optimized rake angle and sharp cutting edge, the **DX110** not only eliminated burr formation on the machined surface but also extended tool life by 1.5x compared to the competitor's	 **DX110 with NS chipbreaker** provided 1.3x tool life over the competitor with superior chip control.

Workpiece type		Pipe	Semi-conductor component
Insert		1QP-DCGT11T304-NS	1QP-VBGT160402-NS
Grade		DX110	DX110
Workpiece material		A5052S / AlMg2.5	A5056 / AlMg5
		 N	 N
Cutting conditions	Cutting speed : *Vc* (m/min)	400	300
	Feed : *f* (mm/rev)	0.1	0.07
	Depth of cut : *ap* (mm)	1	0.2
	Coolant	Wet	Wet
Results		 **DX110 with NS chipbreaker** eliminated chip entanglement, which was the case with the competitor's PCD insert with no chipbreaker.	 While competitors PCD inserts suffered from chip re-cutting due to the absence of a built-in chipbreaker, **DX110 with NS chipbreaker** delivered excellent surface finishes, eliminating chip re-cutting.

Workpiece type		Stator	Scroll compressor component
Insert		1QP-VCMT110304F	1QP-DNMM150408F
Grade		DX160	DX160
Workpiece material		AlSi11Cu3(Fe)	Aluminium alloy
		 N	 N
Cutting conditions	Cutting speed : *Vc* (m/min)	200	560
	Feed : *f* (mm/rev)	0.06	0.03
	Depth of cut : *ap* (mm)	0.25	0.15
	Coolant	Wet	Wet
Results		 A coarse diamond grain grade, **DX160** provided better wear resistance over competitors' submicron PCD grades, achieving 1.8x tool life increase.	 Boasting a sharp and strong cutting edge that excelled competitors' submicron PCD grades, **DX160** grade inserts provided 3.5x tool life increase during interrupted cuts without losing edge integrity.

Workpiece type		Valve parts for the Brake system	Valve parts for the Brake system
Insert		CCGT09T302MF-JS	VBGT110302MF-JP
Grade		KS05F	KS05F
		A6061 / AlMg1SiCu	A6061 / AlMg1SiCu
Workpiece material		 N	 N
Cutting conditions	Cutting speed : *Vc* (m/min)	196	296
	Feed : *f* (mm/rev)	0.1	0.06
	Depth of cut : *ap* (mm)	0.5	0.25
	Coolant	Wet	Wet
Results		 JS Competitor **JS** chipbreaker eliminated the formation of long chips and part surface damage caused by poor chip control.	 JP Competitor **JP** chipbreaker improved productivity by eliminating machine downtime that was caused by the bird nesting of chips.

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