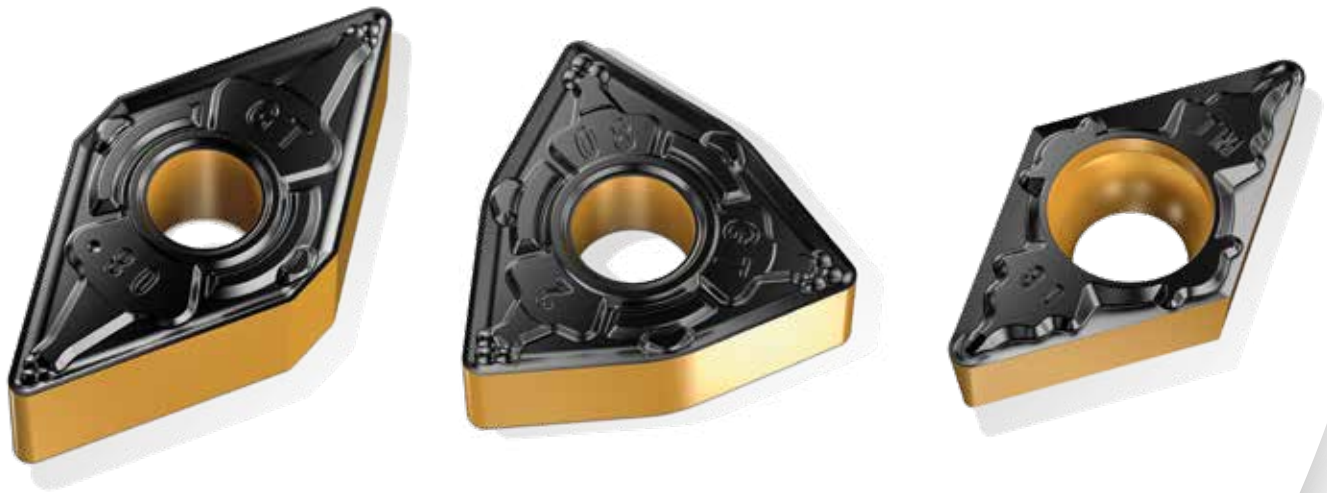
heikenei.com

INDEXABLE CARBIDE INSERTS



INDEXABLE CARBIDE INSERTS ● INNOVATION ● PRECISION

- Turning
- Threading
- Grooving
- Milling

2021

info@heikenei.com

HEIKENEI

wir produzieren industrielle lösungen

Vision

Our vision is to be the world leader in machine tool products, providing our customers with high-quality and creative solutions that will allow their companies' to prosper while contributing to the local economy.

We will work closely with our customers in order to provide optimal products to meet their company goals and needs.

We feel our passion for our products is shared by our customers because of the innovation, quality and design found in each one.

HEIKENEI TOOLS

Mission Statement

Heikenei Engineering Solutions Company’s mission is to provide first-class quality and innovative machine tools and services in response to our customers’ needs. As well to continuously improve in order to meet the ever-changing needs of our customers.

Heikenei also values the commitment, skills, attitude and effort of its employees which is essential for the success of the company.

The organization believes that by maintaining a healthy business relationship with its customers, suppliers, and employees it will result in further growth, success and future prosperity of the organization..

HEIKENEI TOOLS

HEIKENEI TOOLS 2020 SEASON

We Produce Industrial Products

HEIKENEI TOOLS
MADE IN TURKEY

PROFESSIONAL PRODUCTION

HIGH QUALITY

FAST DELIVERY

CNC Turning & Milling Tools

Heikenei aims to produce the latest technology products to save your time and improve your quality with the best price and fast delivery.

Would you like to work with us?

We always be here to help you about every details and any inquiry.

Heikenei Tools Production Program

- External Grooving
- Internal Grooving
- S-System Turning
- C-System Turning
- T-System Turning
- M-System Turning
- Indexable End Mills
- Face Mills Milling
- Chamfering Tools
- Modular Head Milling
- Hole Making Tools
- Turning Holders for HSS Bits & Spare Parts

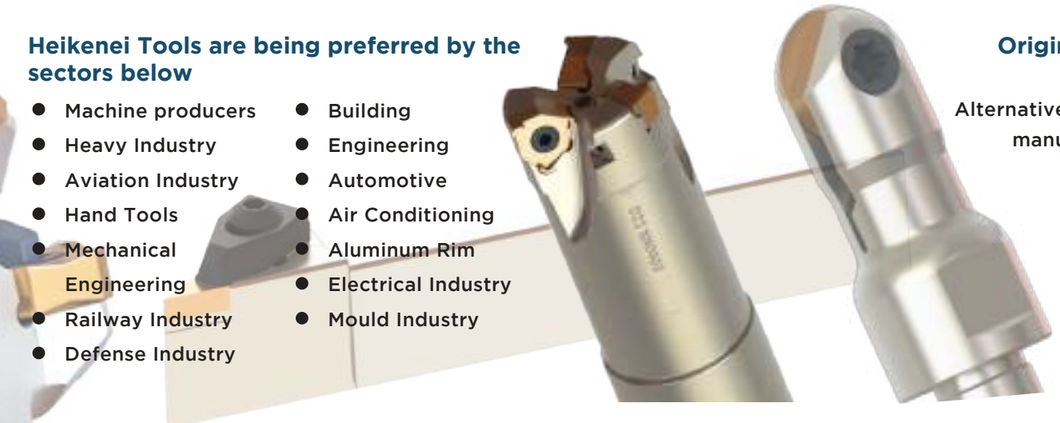
LATEST TECHNOLOGY & PRODUCTION

Heikenei, best machines using high technology systems are produced in Turkey.

Heikenei, best machines using high technology systems are produced in Turkey.

Heikenei Tools are being preferred by the sectors below

- Machine producers
- Heavy Industry
- Aviation Industry
- Hand Tools
- Mechanical Engineering
- Railway Industry
- Defense Industry
- Building
- Engineering
- Automotive
- Air Conditioning
- Aluminum Rim
- Electrical Industry
- Mould Industry

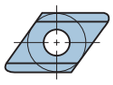
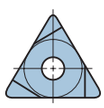
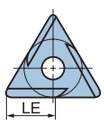
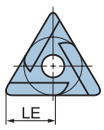
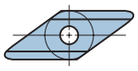


Original Tools

Alternative for many manufacturers.

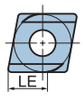
CHIPBREAKER SYSTEMS

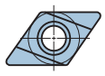
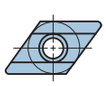
NEGATIVE INSERTS

Geometry	Insert Number	L3	B7	B2
	DNGG150404R/L	2.8		15
	DNGG150408R/L	2.8		15
	SNGG090304R/L	1.8	1.6	15
	SNGG090308R/L	1.8	1.6	15
	SNGG120404R/L	2.3	3.7	15
	SNGG120408R/L	2.3	3.7	15
	TNGG160402R/L-FS	1.3		15
	TNGG160404R/L-FS	1.3		15
	TNGG160408R/L-FS	1.3		15
	TNGG160402R/L-F	2.5		15
	TNGG160404R/L-F	2.5		15
	TNGG160408R/L-F	2.5		15
	TNGG160402R/L-K	1.5	7.1	15
	TNGG160404R/L-K	1.5	5.4	15
	TNGG110302R/L	1.3	3.2	15
	TNGG110304R/L	1.3	3.0	15
	TNGG110308R/L	1.3	2.7	15
	TNGG160304R/L	2.3	5.4	15
	TNGG160402R/L	1.3	8.7	15
	TNGG160404R/L	2.3	5.4	15
	TNGG160408R/L	2.3	5.1	15
	TNGG220404R/L	2.8	9.4	15
	TNGG220408R/L	2.8	9.1	15
	VNGG160404R/L	1.8		15
	VNGG160408R	1.8		15

CHIPBREAKER SYSTEMS

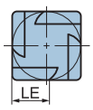
POSITIVE INSERTS

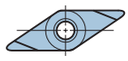
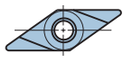
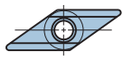
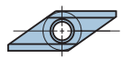
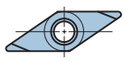
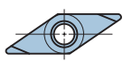
Geometry	Insert Number	L3	B7
	CCET 0602V3R/L-SR	2.2	-
	CCET 060201R/L-SR	2.2	-
	CCET 060202R/L-SR	2.2	-
	CCET 060204R/L-SR	2.2	-
	CCET 09T3V3R/L-SR	3.2	-
	CCET 09T301R/L-SR	3.2	-
	CCET 09T302R/L-SR	3.2	-
	CCET 09T304R/L-SR	3.2	-
	CCET 060200R/L-SN	1.0	-
	CCET 0602V3R/L-SN	1.0	-
	CCET 060201R/L-SN	1.0	-
	CCET 060202R/L-SN	1.0	-
	CCET 060204R/L-SN	1.0	-
	CCET 09T300R/L-SN	1.5	-
	CCET 09T3V3R/L-SN	1.5	-
	CCET 09T301R/L-SN	1.5	-
	CCET 09T302R/L-SN	1.5	-
	CCET 09T304R/L-SN	1.5	-
	CCET 0602V3R/LW-SN	1.0	-
	CCET 09T3V3R/LW-SN	1.5	
	CCGH 060202R/L-F	1.2	-
	CCGH 060204R/L-F	1.4	-
	CCGT 03S1V3L-F	0.8	-
	CCGT 03S101L-F	0.8	-
	CCGT 03S102L-F	0.8	-
	CCGT 03S104L-F	0.8	-
	CCGT 04T0V3L-F	1.0	-
	CCGT 04T001L-F	1.0	-
	CCGT 04T002L-F	1.0	-
	CCGT 04T004L-F	1.0	
	CCGT 0602V3R/L-SS	1.0	3.0
	CCGT 060201R/L-SS	1.0	3.0
	CCGT 060202R/L-SS	1.0	3.0
	CCGT 09T3V3R/L-SS	1.0	5.0
	CCGT 09T301R/L-SS	1.0	5.0
	CCGT 09T302R/L-SS	1.0	5.0
	CCGT 0602V3R-SN	1.0	3.0
	CCGT 060201R/L-SN	1.0	3.0
	CCGT 060202R/L-SN	1.0	3.0
	CCGT 09T3V3R/L-SN	1.5	5.0
	CCGT 09T301R/L-SN	1.5	5.0
	CCGT 09T302R/L-SN	1.5	5.0
	CCGT 09T304R/L-SN	1.5	5.0
	CPGT 080204R/L-F	0.6	-
	CPGT 090302R/L-F	0.8	-
	CPGT 090304R/L-F		

Geometry	Insert Number	L3	B7
	CPMH 080204R/L-F	1.0	-
	CPMH 090304R/L-F	1.4	-
	DCET 0702V3R/L-SR	2.5	-
	DCET 070201R/L-SR	2.5	-
	DCET 070202R/L-SR	2.5	-
	DCET 070204R/L-SR	2.5	-
	DCET 11T3V3R/L-SR	3.7	-
	DCET 11T301R/L-SR	3.7	-
	DCET 11T302R/L-SR	3.7	-
	DCET 11T304R/L-SR	3.7	
	DCET 070200R/L-SN	1.0	-
	DCET 0702V3R/L-SN	1.0	-
	DCET 070201R/L-SN	1.0	-
	DCET 070202R/L-SN	1.0	-
	DCET 070204R/L-SN	1.0	-
	DCET 11T300R/L-SN	1.5	-
	DCET 11T3V3R/L-SN	1.5	-
	DCET 11T301R/L-SN	1.5	-
	DCET 11T302R/L-SN	1.5	-
	DCET 11T304R/L-SN	1.5	
	DCET 0702V3R/LW-SN	1.0	-
	DCET 11T3V3R/LW-SN	1.5	-
	DCGT 070202R/L-F	1.0	-
	DCGT 070204R/L-F	1.0	-
	DCGT 11T302R/L-F	1.0	-
	DCGT 11T304R/L-F	1.0	-
	DCGT 0702V3R/L-SS	1.0	3.5
	DCGT 070201R/L-SS	1.0	3.5
	DCGT 070202R/L-SS	1.0	3.5
	DCGT 11T3V3R-SS	1.0	6.5
	DCGT 11T301R-SS	1.0	6.5
	DCGT 11T302R-SS		
	DCGT 0702V3R-SN	1.0	3.5
	DCGT 070201R-SN	1.0	3.5
	DCGT 070202R/L-SN	1.0	3.5
	DCGT 11T3V3R/L-SN	1.5	6.5
	DCGT 11T301R/L-SN	1.5	6.5
	DCGT 11T302R/L-SN	1.5	6.5
	DCGT 11T304R/L-SN	1.5	6.5
	DEGX 150402R/L	2.8	
	DEGX 150404R/L	2.8	-

CHIPBREAKER SYSTEMS

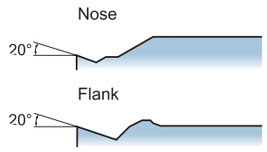
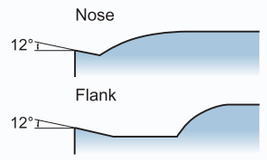
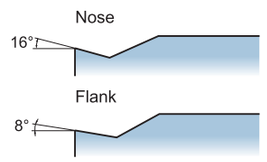
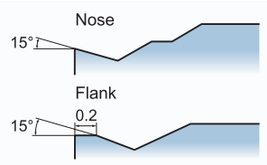
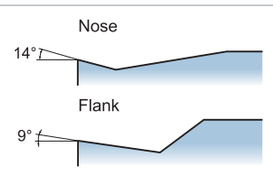
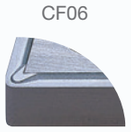
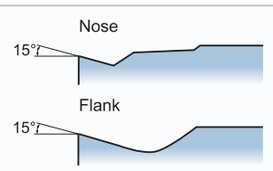
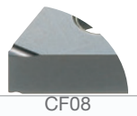
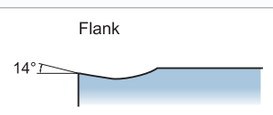
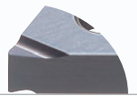
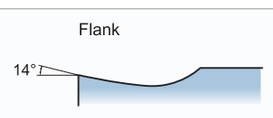
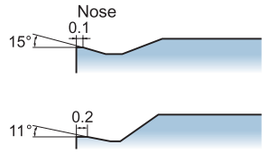
POSITIVE INSERT

Geometry	Insert Number	L3	B7
	DEGX 150402R/L-F	2.5	-
	DEGX 150404R/L-F	2.5	-
	SPGR090304R	1.8	1.6
	TCGT 0601V3L-F	1.0	-
	TCGT 060101L-F	1.0	-
	TCGT 060102R/L-F	1.0	-
	TCGT 060104R/L-F	1.0	-
	TEGX 160302R/L	2.0	6.0
	TEGX 160304R/L	2.0	6.0
	TPGH 080202R/L-FS	0.9	-
	TPGH 080204R/L-FS	0.9	-
	TPGH 090202R/L-FS	1.0	-
	TPGH 090204R/L-FS	1.0	-
	TPGH 110302R/L-FS	1.4	-
	TPGH 110304R/L-FS	1.4	-
	TPGH 160304R/L-FS	2.0	-
	TPGH 160308R/L-FS	2.0	
	TPGR 110304R/L	1.3	3.0
	TPGR 160304R/L	2.3	5.4
	TPGR 160308R/L	2.3	5.1
	TPGX 080202R/L	1.3	-
	TPGX 080204R/L	1.3	-
	TPGX 090202R/L	1.6	-
	TPGX 090204R/L	1.6	-
	TPGX 090208R/L	1.4	-
	TPGX 110302L	1.8	-
	TPGX 110304R/L	1.8	-
	TPGX 110308R/L	1.8	

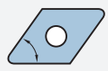
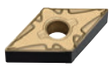
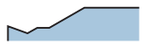
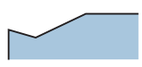
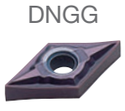
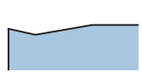
Geometry	Insert Number	L3	B7
	VBGT110302R/L-F	1.0	-
	VBGT110304R/L-F	1.0	-
	VBGT 160402R/L-F	1.5	-
	VBGT 160404R/L-F	1.5	-
	VBET 1103V3R/L-SR	2.5	-
	VBET 110301R/L-SR	2.5	-
	VBET 110302R/L-SR	2.5	-
	VBET 110304R/L-SR	2.5	-
	VBET 110300R/L-SN	1.0	-
	VBET 1103V3R/L-SN	1.0	-
	VBET 110301R/L-SN	1.0	-
	VBET 110302R/L-SN	1.0	-
	VBET 110304R/L-SN	1.0	
	VBET1103V3R/LW-SN	1.0	
	VCGT080202R/L-F	0.8	-
	VCGT080204R/L-F	0.8	-
	VDGX160302R/L	2.0	-
	VDGX160304R/L	2.0	-
	WBGT0201V3L-F	1.0	-
	WBGT020101L-F	1.0	-
	WBGT020102L-F	1.0	-
	WBGT020104L-F	1.0	-
	WBGTL302V3L-F	1.0	-
	WBGTL30201L-F	1.0	-
	WBGTL30202R/L-F	1.0	-
	WBGTL30204R/L-F	1.0	
	WCGT020102R/L	1.0	-
	WCGT020104R/L	1.0	-
	WCGTL30202L	1.0	-
	WCGTL30204L	1.0	-
	WPGT040204R/L-FS	1.0	-
	WPGT060304R/L-FS		

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

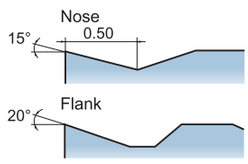
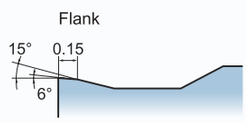
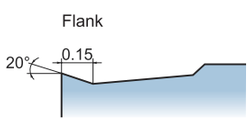
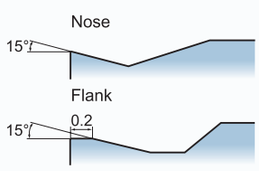
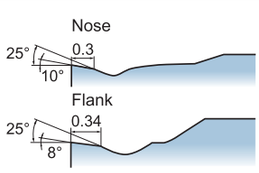
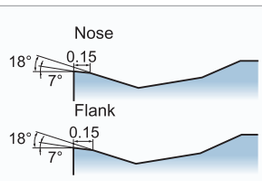
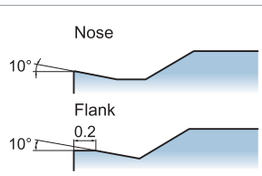
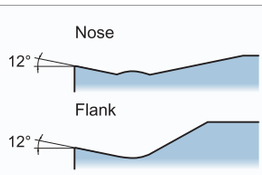
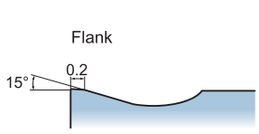
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**First recommendation for finishing carbon steel and alloy steel** Controls chip clogging during high-feed cutting and prevents chips of soft work materials from running onto their surfaces. Large rake angle controls vibrations and work deformation when machining low-rigidity workpieces.	CF01 	
		First recommendation for finishing carbon steel, alloy steel and stainless steel Double sided chip breaker. Stable chip control even at small depth of cut.	CF02 	
		Alternative chip breaker for finishing mild steel Double sided chip breaker. Stable chip control even at small depth of cut. Sharp edge gives best performance.	CF03 	
		First recommendation for finishing mild steel Double sided chip breaker. Effectively controls adhesive chips. Suitable for mild steel finishing.	CF04 	
	G	**First recommendation for finishing difficult-to-cut materials** Double sided chip breaker. Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces good cutting surface. The curved edge allows smooth chip discharge.	CF05 	
		Alternative chip breaker for finishing carbon steel and alloy steel Double sided chip breaker. G class insert tolerance is suitable for workpieces requiring close dimensional tolerances. Stable chip control even at small depth of cut.	CF06 	
		Precise finishing Double sided chip breaker. A narrow lead chip breaker for good chip control. The sharp edge produces a good surface finish.	CF07 	
		Finishing Double sided chip breaker. Lead chip breaker controls chip flow. The sharp edge produces a good surface finish.	CF08 	
Light Cutting	M	**First recommendation for light cutting of carbon steel and alloy steel** Double sided chip breaker. Stable chip control at light cutting range. The curved edge allows smooth chip discharge.	CF09 	

OVERVIEW OF CHIPBREAKER FORMS

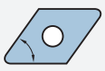
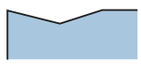
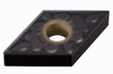
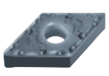
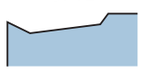
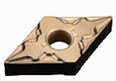
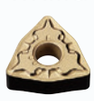
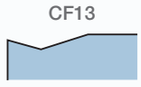
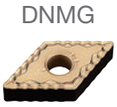
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF1 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF2 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF3 
CNMG 	DNMG 		TNMG 		WNMG 		CF4 
CNGG 	DNGG 			VNGG 			CF5 
CNGG 	DNGG 		TNGG 				CF6
			TNGG				CF7
			TNGG	VNGG			CF8
CNMG	DNMG	SNMG	TNMG	VNMG	WNMG		CF9

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

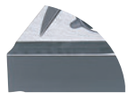
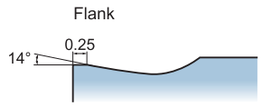
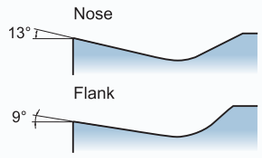
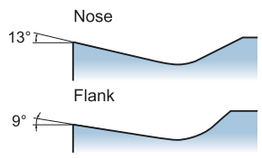
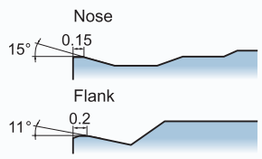
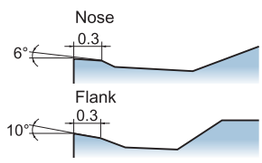
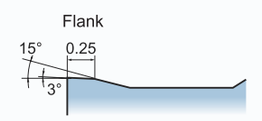
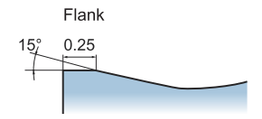
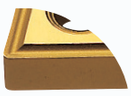
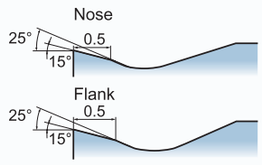
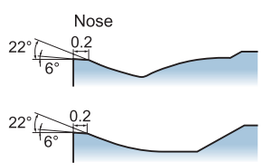
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**First recommendation for light cutting of stainless steel** M class double sided chip breaker. Stable chip control at light cutting range. Breaker with high rake angle provides excellent burr control.	CF10 	
		First recommendation for light cutting of cast iron Narrow positive land provides low cutting resistance and excellent finish.	CF11 	
		First recommendation for light cutting of difficult-to-cut materials Enhanced chip disposal for depth of cut smaller than the corner R.	CF12 	
		Alternative chip breaker for light cutting of carbon steel and alloy steel Double sided chip breaker. Can be used at low depth of cuts and high feed rates. The curved edge allows smooth chip discharge. Recommended for workpieces in the 160-250HB range.	CF13 	
	G	**Alternative chip breaker for light cutting of carbon steel and alloy steel** Double sided chip breaker. Superior chip control at small depth of cuts. Covers copying and back turning with wavy edge. Recommended for workpieces in the 200- 300HB range.	CF14 	
		Wiper insert for light cutting of carbon steel and alloy steel Double sided chip breaker. The wiper allows up to two times higher feed. Wiper design for increased productivity and improved surface finish.	CF15 	
		First recommendation for light cutting of mild steel Double sided chip breaker. Effectively controls adhesive chips. Suitable for mild steel light cutting.	CF16 	
		Alternative chip breaker for light cutting of carbon steel and alloy steel Double sided chip breaker. Suitable for light cutting. The curved edge allows smooth chip discharge.	CF17 	
Light Cutting	M	**Alternative chip breaker for light cutting of carbon steel and alloy steel** Double sided chip breaker. Parallel chip breaker controls chip flow. Suitable for finish-light cutting. Precision chip breaker.	CF18 	

OVERVIEW OF CHIPBREAKER FORMS

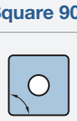
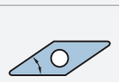
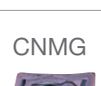
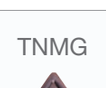
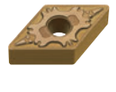
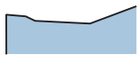
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF10 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF11 
CNMG 	DNMG 		TNMG 	VNMG 	WNMG 		CF12 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF13 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF14
CNMG	DNMX		TNMX		WNMG		CF15
CNMG	DNMG	SNMG	TNMG		WNMG		CF16
CNMG	DNMG	SNMG	TNMG		WNMG		CF17
		SNMG	TNMG				CF18

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

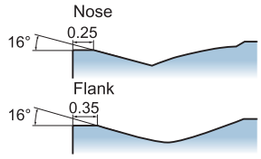
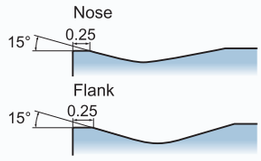
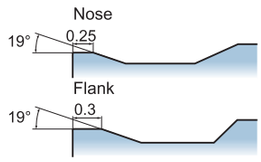
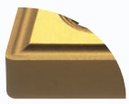
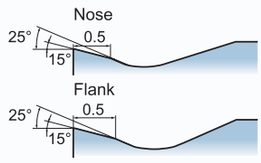
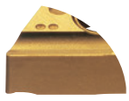
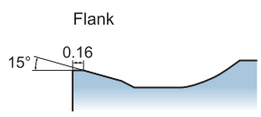
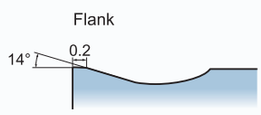
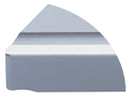
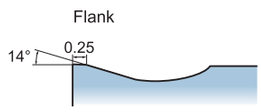
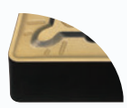
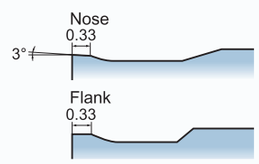
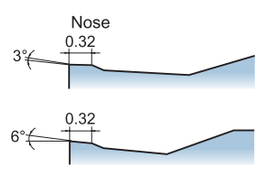
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**Light cutting** Double sided chip breaker. Parallel chip breaker. Excellent chip control at low to medium feed rates.	CF19 	
		First recommendation for light cutting of difficult-to-cut materials Double sided chip breaker. Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	CF20 	
		First recommendation for light cutting of difficult-to-cut materials Double sided chip breaker, Single sided chip breaker (D type, V type). The sharp edge produces a good surface finish. Ideal for heat-resistant alloy and titanium alloy. The curved edge allows smooth chip discharge.	CF21 	
		First recommendation for medium cutting of carbon steel and alloy steel Double sided chip breaker. Suitable for medium to light cutting. Breaker geometry appropriate for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance.	CF22 	
	G	**First recommendation for medium cutting of stainless steel** M class double sided chip breaker. Optimized land geometry by simulation analysis technology controls the plastic deformation of the corner and achieves the long tool life.	CF23 	
		First recommendation for medium cutting of cast iron Optimum balance between sharpness and high edge strength for general use.	CF24 	
		Alternative chip breaker for medium cutting for cast iron Breakers are suitable for a wide range of applications. Maintenance of high stability by the flat-land.	CF25 	
		Alternative chip breaker for light to medium cutting of stainless steel M class double sided chip breaker. Alternative chip breaker of main chip breaker LM and MM. Excellent notch wear resistance for light to medium cutting.	CF26 	
Light Cutting	M	**First recommendation for medium cutting of carbon steel and alloy steel** Alternative chip breaker for finishing and light cutting of cast iron Double sided chip breaker. Positive land provides sharp cutting action.	CF27 	

OVERVIEW OF CHIPBREAKER FORMS

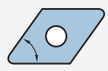
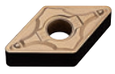
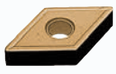
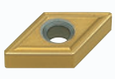
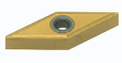
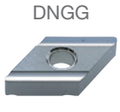
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
			TNGG 				CF19 
CNMG 	DNMG 		TNMG 	VNMG 	WNMG 		CF20 
CNGG 	DNGM 			VNGM			CF21
CNMG 	DNMG 	SNMG 	TNMG 	VNMG	WNMG 		CF22
CNMG 	DNMG 	SNMG 	TNMG 	VNMG	WNMG 		CF23
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF24 
CNMG	DNMG	SNMG	TNMG	VNMG	WNMG		CF25
CNMG	DNMG	SNMG	TNMG	VNMG	WNMG		CF26
CNMG	DNMG	SNMG	TNMG	VNMG	WNMG		CF27

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

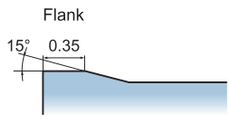
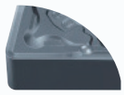
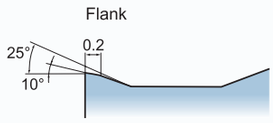
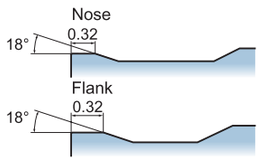
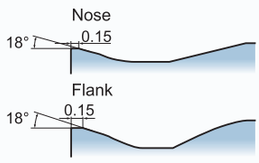
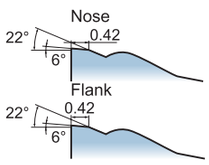
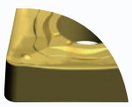
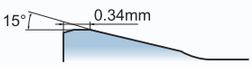
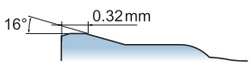
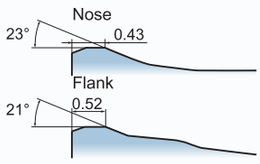
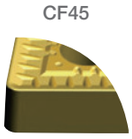
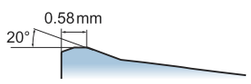
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**First recommendation for rough cutting of mild steel** Alternative chip breaker for medium cutting of carbon steel and alloy steel Double sided chip breaker. Flat land offers high edge strength.	CF28 	
		First recommendation for medium cutting of cast iron Alternative chip breaker for medium cutting of carbon steel and alloy steel Double sided chip breaker. Flat land offers high edge strength.	CF29 	
		Wiper insert for medium cutting carbon steel and alloy steel Double sided chip breaker. The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	CF30 	
		First recommendation for medium cutting of stainless steel, mild steel and difficult-to-cut materials Double sided chip breaker. The sharp edge gives best performance.	CF31 	
		Alternative chip breaker for medium cutting of stainless steel Double sided chip breaker. Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control.	CF32 	
		Alternative chip breaker for medium cutting of carbon steel and alloy steel Double sided chip breaker. Parallel chip breaker controls chip flow. Suitable for light to medium cutting.	CF33 	
	G	**Medium cutting** Double sided chip breaker. Parallel chip breaker. Good chip control for medium feed rates. First recommendation for rough cutting of carbon steel and alloy steel	CF34 	
Rough Cutting	M	**Double sided chip breaker.** For interrupted cuts and removing scale. Good balance of cutting edge strength and low cutting resistance because of suitable rake angle.	CF35 	
		First recommendation for rough cutting of stainless steel M class double sided chip breaker. Excellent fracture resistance at interrupted cutting due to the optimum land angle and honing geometry.	CF36 	

OVERVIEW OF CHIPBREAKER FORMS

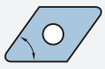
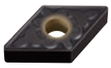
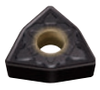
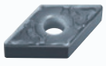
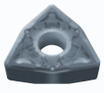
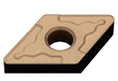
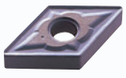
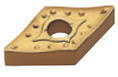
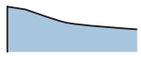
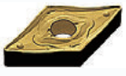
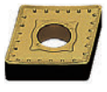
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF28 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 	RNMG 	CF29 
CNMG 	DNMX 		TNMX 		WNMG 		CF30 
CNMG 	DNMG 	SNMG 	TNMG 	VNMG 	WNMG 		CF31 
			TNMG 				CF32 
			TNMG 				CF33 
	DNGG 	SNGG 	TNGG	VNGG			CF34
CNMG	DNMG	SNMG	TNMG		WNMG		CF35
CNMG	DNMG	SNMG	TNMG		WNMG		CF36

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

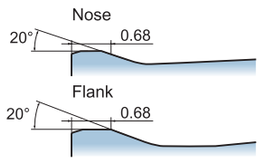
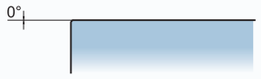
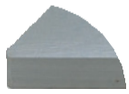
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**For rough cutting of carbon steel, alloy steel and stainless steel** Seating surface and wide land 3 or more times that of conventional products and provide high cutting stability for interrupted machining and scale removal.	CF37 	
		First recommendation for rough cutting of difficult to-cut materials Positive land increases welding resistance and suppresses chip welding and abrasion at low speed cutting.	CF38 	
		For rough cutting of carbon steel, alloy steel and stainless steel Double sided chip breaker. For interrupted cuts and removing scale. A combination of wide land and a large chip pocket allows high feed rates.	CF39 	
		First recommendation for rough cutting of difficult to-cut materials Double sided chip breaker. Excellent balance of edge sharpness and strength. Edge geometry with high face wear resistance.	CF40 	
Heavy Cutting	M	**First recommendation for heavy cutting of mild steel and stainless steel** Single sided chip breaker. Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	CF41 	
		First recommendation for mild steel and stainless steel Low resistance due to narrow flat land. Achieves high chip breaking ability.	CF42 	
		Assist breaker for mild steel and stainless steel Flat land provides outstanding balance between cutting edge strength and sharpness.	CF43 	
		First recommendation for heavy cutting of carbon steel and alloy steel Single sided chip breaker. Covers the medium range of the heavy cutting region. Owing to the straight edge and chamfer, it gives a balance of sharpness and strength. Variable land and a wavy chip breaker for good chip control.	CF44 	
		Assist breaker for general steel and alloy steel High cutting edge strength. Excellent chip discharge even with high feed and high depth of cut.	CF45 	

OVERVIEW OF CHIPBREAKER FORMS

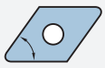
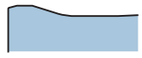
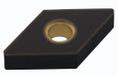
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CNMG 	DNMG 	SNMG 	TNMG 		WNMG 		CF37 
CNMG 	DNMG 	SNMG 	TNMG 		WNMG 		CF38 
CNMG 	DNMG 	SNMG 	TNMG 		WNMG 		CF39 
CNMG 	DNMG 				WNMG 		CF40 
CNMM 	DNMM 	SNMM 	TNMM 				CF41 
CNMM 	DNMM 	SNMM 	TNMM 				CF42 
CNMM 		SNMM					CF43
CNMM		SNMM					CF44
CNMM		SNMM					CF45

GRADING OF CHIPBREAKER FORMS

NEGATIVE INSERTS

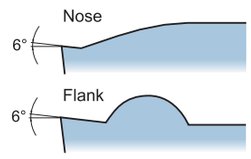
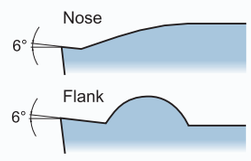
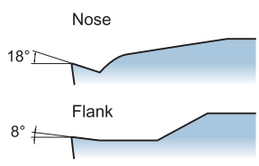
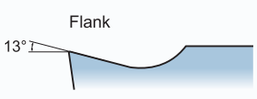
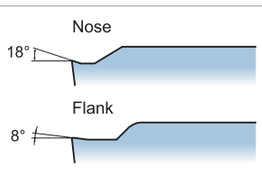
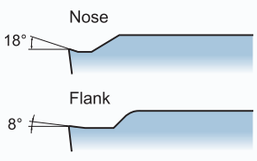
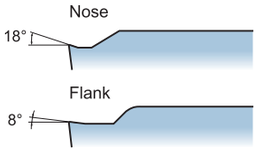
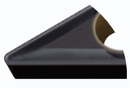
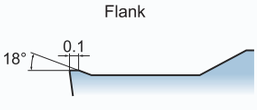
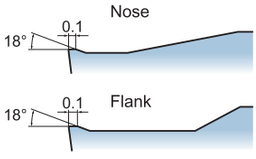
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Heavy Cutting	M	**Alternative chip breaker for heavy cutting of carbon steel and alloy steel** Single sided chip breaker. Covers the upper end of the heavy cutting region. Wide land and large chamfer offer high edge strength. A wide chip breaker prevents chip jamming.	CF46 	
For Cast Iron	M	**First recommendation for rough cutting of cast iron** Double sided flat insert. Most effective for unstable machining due to its high edge strength.	CF47 	
	G	**For cast iron** Double sided flat insert. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	CF48 	

OVERVIEW OF CHIPBREAKER FORMS

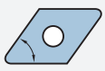
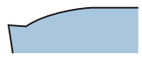
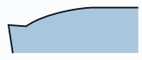
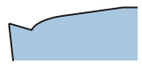
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CNMM 		SNMM 					CF46 
CNMA 	DNMA 	SNMA 	TNMA 		WNMA 		CF47 
	DNGA 	SNGA 	TNGA 	VNGA 			CF48 

GRADING OF CHIPBREAKER FORMS

5° POSITIVE INSERTS

Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	**First recommendation for finishing carbon steel and alloy steel** Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	CF49 	
		First recommendation for finishing stainless steel Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	CF50 	
		First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	CF51 	
		Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	CF52 	
Light Cutting	M	**First recommendation for light cutting of carbon steel and alloy steel** Sharp cutting edge due to a large rake angle. Prevents weldingof the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	CF53 	
		First recommendation for light cutting of stainless steel Sharp cutting edge due to a large rake angle. Prevents weldingof the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	CF54 	
		Light cutting of carbon steel, alloy steel, mild steel and stainless steel Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	CF55 	
Medium Cutting	M	**First recommendation for medium cutting of cast iron** Optimum balance between sharpness and high edge strength for general use.	CF56 	
		First recommendation for medium cutting of carbon steel and alloy steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depth of cut.	CF57 	

OVERVIEW OF CHIPBREAKER FORMS

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
				VBMT 			CF49 
				VBMT 			CF50 
				VBMT 			CF51 
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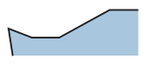
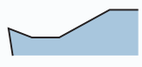
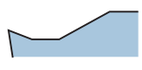
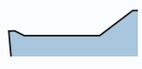
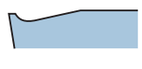
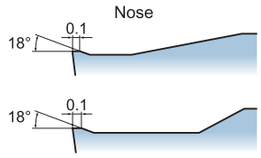
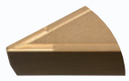
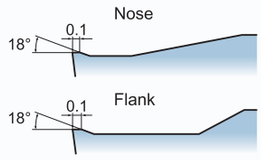
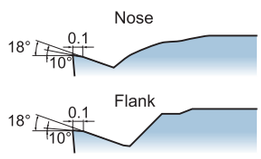
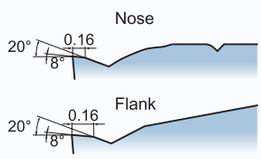
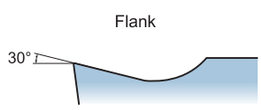
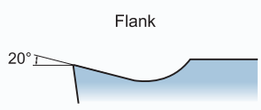
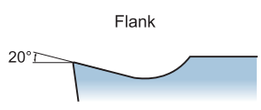
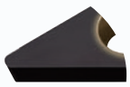
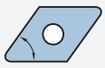
				VBMT 			CF53 
				VBMT 			CF54 
				VBMT 			CF55 
				VBMT 			CF56 
				VBMT 			CF57 

GRADING OF CHIPBREAKER FORMS

5° POSITIVE INSERTS

Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Medium Cutting	M	**First recommendation for medium cutting of stainless steel** Good balance of wear resistance and fracture resistance because of the fiat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depth of cut.	CF58 	
		Medium cutting of carbon steel, alloy steel and stainless steel Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.	CF59 	
		Medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert with a large rake angle achieves sharp cutting edge performance. The double breakers and round-shaped dots in the rake face achieve a wide range of chip discharge.	CF60 	
		Medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert with a large rake angle achieves sharp cutting edge performance. The double breakers and round-shaped dots in the rake face achieve a wide range of chip discharge.	CF61 	
	E	**Medium cutting of automatic lathe machining** A wide lead chip breaker. Insert designed for low resistance chip control.	CF62 	
		Medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control for low to medium feed rates.	CF63 	
		Medium cutting:>f automatidathernachining A parallel chip breaker. Excellent chip control for low to medium feed rates. The wiper produces good cutting surface.	CF64 	
For Cast Iron	M	**Heavy cutting:>f cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	CF65 	

OVERVIEW OF CHIPBREAKER FORMS

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
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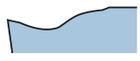
				VBMT 			CF59 
				VBMT 			CF60 
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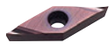
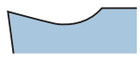
				VBET 			CF62 
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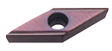
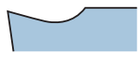
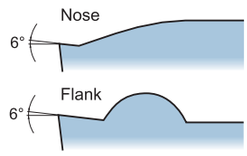
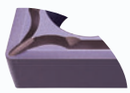
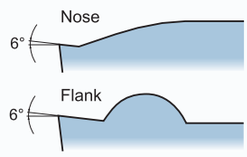
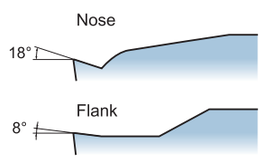
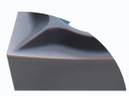
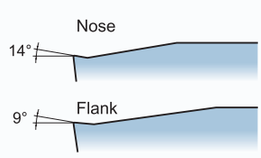
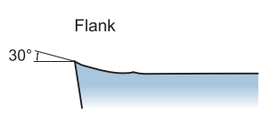
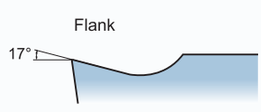
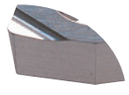
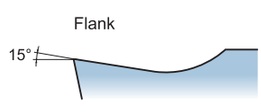
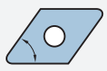
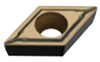
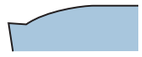
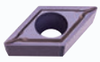
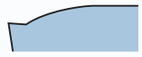
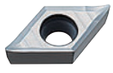
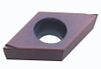
				VBET 			CF64 
				VBMW 			CF65 

GRADING OF CHIPBREAKER FORMS

5° POSITIVE INSERTS

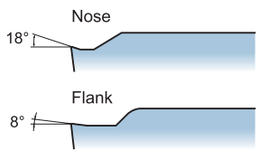
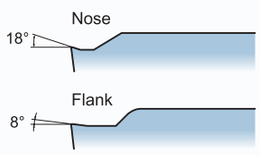
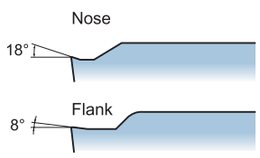
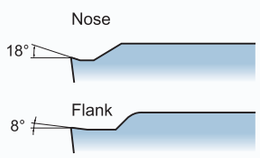
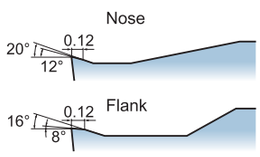
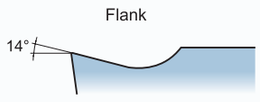
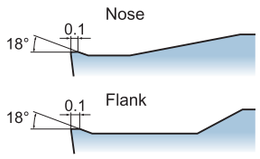
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	First recommendation for finishing carbon steel and alloy steel Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	CF66 	
		First recommendation for finishing stainless steel Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	CF67 	
		First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	CF68 	
		First recommendation for finishing difficult-to-cut materials Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	CF69 	
		For aluminium alloy The high rake angle and 3D curved cutting edge provides sharpness at the cutting point. Additionally the 3D shape of the rake face enables excellent chip control. Lapping of the top surface gives a mirror finish for improved welding resistance.	CF70 	
		Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	CF71 	
		Finishing Lead chip breaker. Excellent chip control at low feed rates.	CF72 	

OVERVIEW OF CHIPBREAKER FORMS

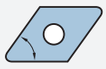
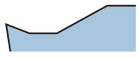
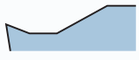
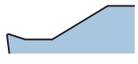
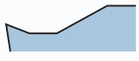
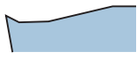
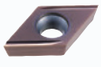
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Cutter Form
								
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF66 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF67 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF68 
CCGT 								CF69 
CCGT 	DCGT 		TCGT 	VCGT 			RCGT 	CF70 
CCGT_ CCGH 	DCGT 		TCGT 	VCGT 				CF71 
					WCGT 			CF72

GRADING OF CHIPBREAKER FORMS

7° POSITIVE INSERTS

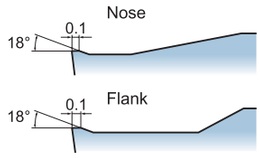
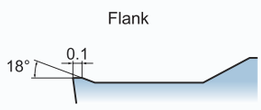
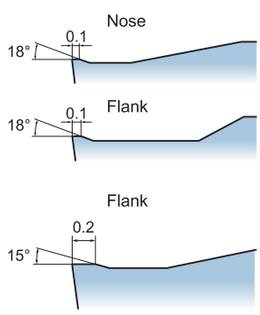
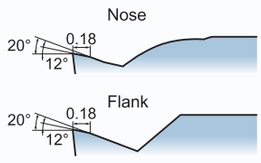
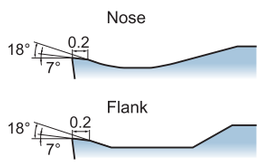
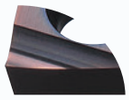
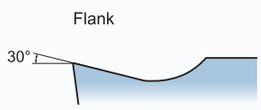
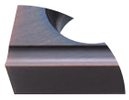
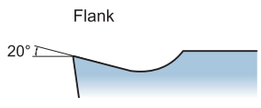
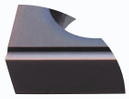
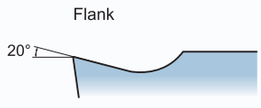
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Light Cutting	M	First recommendation for light cutting of carbon steel and alloy steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	CF73 	
		First recommendation for light cutting of stainless steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	CF74 	
		Light cutting of carbon steel and alloy steel Chip control is improved by having a chip breaker geometry suitable for copying.	CF75 	
		Alternative chip breaker for light cutting of carbon steel, alloy steel, mild steel and stainless steel Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	CF76 	
		Wiper insert for light cutting of carbon steel, alloy steel, mild steel and stainless steel The wiper allows up to two times higher feed. Positive land improves sharpness.	CF77 	
		Light cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low feed rates.	CF78 	
Medium Cutting	M	First recommendation for medium cutting of carbon steel and alloy steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depth of cut.	CF79 	

OVERVIEW OF CHIPBREAKER FORMS

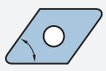
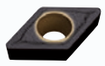
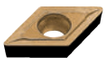
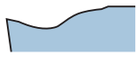
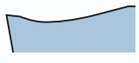
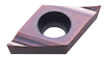
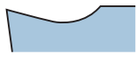
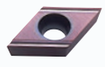
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Cutter Form
								
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF73 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF74 
						XCMT 		CF75 
CCMH 	DCMT 			VCMT 				CF76 
CCMT 								CF77 
CCGT 	DCGT 							CF78 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF79 

GRADING OF CHIPBREAKER FORMS

7° POSITIVE INSERTS

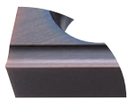
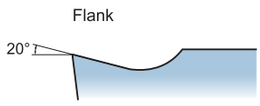
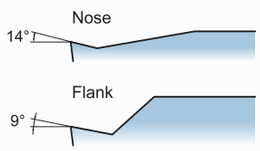
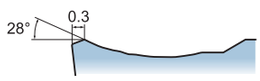
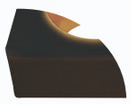
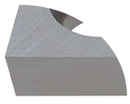
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Light Cutting	M	First recommendation for medium cutting of stain steel Good balance of wear resistance and fracture resistance because the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance an reduces vibration and chip jamming even at large depth of cut.	CF80 	
		First recommendation for medium cutting of cast iron Optimum balance between sharpness and high edge strength for general use.	CF81 	
		First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron Balance of edge strength and sharpness due to a combination of flat land and large rake angle."	CF82 	
		Alternative chip breaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert and the large rake angle achieve sharp cutting edge performance. The double breakers and round shape in the rake face achieve a wide range of chip discharge.	CF83 	
	E	Wiper insert for medium cutting of carbon steel, alloy steel, mild steel and stainless steel The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	CF84 	
		Medium cutting of automatic lathe machining A wide lead chip breaker. Insert designed for low resistance chip control.	CF85 	
Medium Cutting	M	Medium cutting of automatidathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates. Suitable for precise machining with E class tolerance.	CF86 	
		Medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates."	CF87 	

OVERVIEW OF CHIPBREAKER FORMS

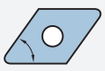
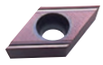
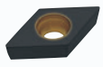
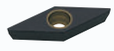
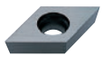
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Cutter Form
								
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF80 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 				CF81 
CCMT 	DCMT 	SCMT 	TCMT 	VCMT 	WCMT 		RCMT 	CF82 
							RCMX 	
CCMH 	DCMT 			VCMT 				CF83 
CCMT 								CF84 
CCET 	DCET 							CF85 
CCET 	DCET 							CF86
CCGT	DCGT							CF87

GRADING OF CHIPBREAKER FORMS

7° POSITIVE INSERTS

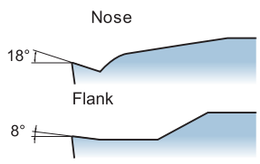
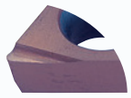
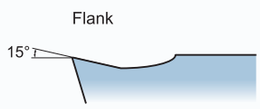
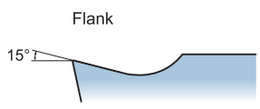
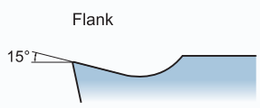
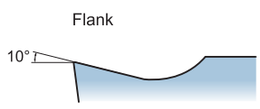
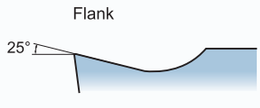
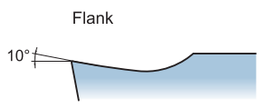
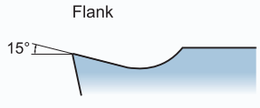
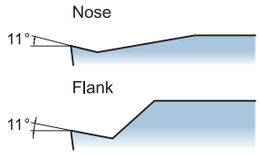
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Medium Cutting	E	Medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates. The wiper produces a good surface finish."	CF88 	
	G	Medium cutting of automatic lathe machining 3D moulded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning."	CF89 	
Heavy Cutting	M	Heavy cutting of carbon steel and alloy steel A wide groove chip breaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut."	CF90 	
For Cast Iron	M	Heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength."	CF91 	
	G	For cast iron Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance."	CF92 	

OVERVIEW OF CHIPBREAKER FORMS

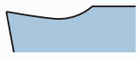
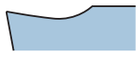
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Cutter Form
								
CCET_R/LW-SN 	DCET_R/LW-SN 							CF88 
CCGT_SMG 	DCGT_SMG 							CF89 
							RCMX_RR 	CF90 
CCMW 	DCMW 	SCMW 	TCMW 	VCMW 				CF91 
CCGW 	DCGW 							CF92 

GRADING OF CHIPBREAKER FORMS

11° POSITIVE INSERTS

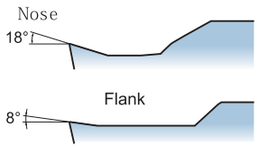
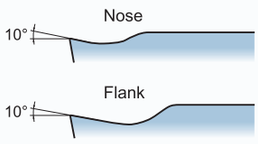
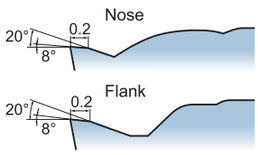
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Finish Cutting	M	First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	CF93 	
	G	Alternative chip breaker for finishing carbon steel, alloy steel, stainless steel, cast iron and aluminium alloy Small wide lead chip breaker. Sharp cutting edge gives a good surface finish.	CF94 	
	M	Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	CF95 	
	G	Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish."	CF96 	
		Finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates."	CF97 	
		Finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates.	CF98 	
	M	Finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates.	CF99 	
	E	Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	CF100 	
	G	Medium cutting of automatidathe machining 3D moulded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	CF101 	

OVERVIEW OF CHIPBREAKER FORMS

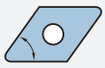
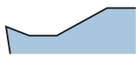
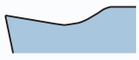
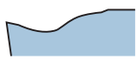
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
CPMH 			TPMH 				CF93 
			TPGH 		W PGT 		CF94 
CPMH 							CF95 
CPGT 							CF96 
			TPGX 				CF97 
CPGT 							CF98 
			TPMX 				CF99 
				VPET 			CF100 
				VPGT 			CF101 

GRADING OF CHIPBREAKER FORMS

11° POSITIVE INSERTS

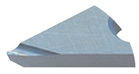
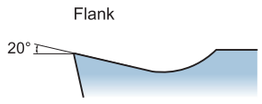
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
Light Cutting	M	First recommendation for light cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	CF102 	
Medium Cutting	M	Alternative chip breaker for medium cutting of carbon steel, alloy steel and stainless steel Standard, general purpose chip breaker.	CF103 	
		First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron A positive insert and large rake angle achieves sharp cutting edge performance. Double breakers in the rake face achieve a wide range of chip discharge.	CF104 	
For Cast Iron	M	Heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength.	CF105 	
	G	For cast iron Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	CF106 	

OVERVIEW OF CHIPBREAKER FORMS

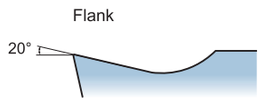
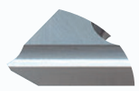
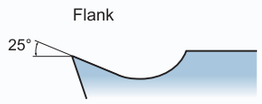
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
							
CPMH 			TPMH 				CF102 
CPMX 		SPMT 	TPMX 				CF103 
 CPMH			TPMH 		WPMT 		CF104 
		SPMW 					CF105 
		SPGX 	TPGX 				CF106 

GRADING OF CHIPBREAKER FORMS

15° POSITIVE INSERTS

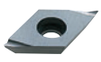
Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
For Aluminium Alloy	G	For aluminium alloy cutting Lead chip breaker. Sharp cutting edge gives a good surface finish.	CF107 	

20° POSITIVE INSERTS

Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
For Aluminium Alloy	G	For aluminium alloy cutting Lead chip breaker. Sharp cutting edge gives a good surface finish.	CF108 	
		For aluminium alloy cutting A parallel chip breaker. Sharp cutting edge gives a good surface finish. Good chip control for medium feed rates.	CF109 	

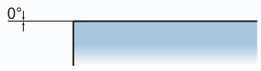
OVERVIEW OF CHIPBREAKER FORMS

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
				VDGX 			CF107 

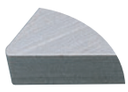
Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Cutter Form
	DEGX 						CF108 
	DEGX 		TEGX 				CF109 

GRADING OF CHIPBREAKER FORMS

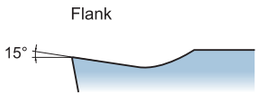
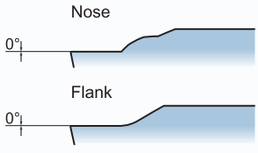
NEGATIVE INSERTS

Application	Tolerance	Form Description	Cutter Form Image	Cross Section Geometry
For Cast Iron	M	Heavy cutting of cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping.	CF110 	
	G	For cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	CF111 	

7° POSITIVE INSERTS

For Cast Iron	G	For cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	CF112 	

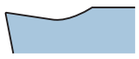
11° POSITIVE INSERTS

Finish Cutting	G	Finishing A parallel chip breaker. Good chip control for low to medium feed rates.	CF113 	
Light to Medium Cutting	M	Length to medium cutting of carbon steel alloy steel and stainless steel Standard, general purpose chip breaker.	CF114 	
For Cast Iron	M	Heavy cutting of cast iron Flattop. Most effective for unstable machining due to high edge strength and stable insert clamping.	CF115 	
	G	For cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	 CF116	

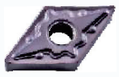
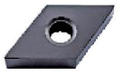
OVERVIEW OF CHIPBREAKER FORMS

Rhombic 80°	Square 90°	Triangular 60°	Cutter Form
			
CNMN 	SNMN 	TNMN 	CF110 
	SNGN 	TNGN 	CF111 

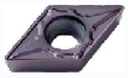
Rhombic 80°	Square 90°	Triangular 60°	Cutter Form
			
		TCGN 	CF112 

Rhombic 80°	Square 90°	Triangular 60°	Cutter Form
			
	SPGR_R 	TPGR_R/L 	CF113 
	SPMR 	TPMR 	CF114 
	SPMN 	TPMN 	CF115 
	SPGN 	TPGN 	CF116 

TURNING INSERTS

CNMG	CNMG	CNMG	CNMG	CNMG	CNMG
 D120	 D121	 D122	 D123	 D124	 D125
CNMG	CNMG	CNMM	CNMG	CNMA	CNMG
 D126	 D127	 D128	 D129	 D130	 D131
DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
 D132	 D133	 D134	 D135	 D136	 D137
DNMG	DNMA	SNMG	SNMG	SNMG	SNMG
 D138	 D139	 D140	 D141	 D142	 D143
SNMG	SNMG	SNMG	SNMG	SNMG	SNMA
 D144	 D145	 D136	 D147	 D148	 D149
TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
 D150	 D151	 D152	 D153	 D154	 D155
TNMG	TNMG	TNMA	VNMG	VNMG	VNMG
 D156	 D157	 D158	 D159	D160	D161

TURNING INSERTS

CCMT	DCMT	DCMT	DCMT	DCMT	RCMX
 D152	 D153	 D154	 D155	 D156	 D157
RCMX	SCMT	SCMT	SCMT	SCMT	TCMT
 D158	 D159	 D160	 D161	 D162	 D163
TCMT	TCMT	TCMT	VCMT	VCMT	VCMT
 D164	 D165	 D166	 D167	 D168	 D169
VCMT	VBMT	VBMT	VBMT	VBMT	VBMT
 D164	 D165	 D166	 D167	 D168	 D169
TBGH	TPGH	KNUX	175.32		
 D170	 D171	 D172	 D173		

TURNING INSERTS

VNMG	VNMG	VNMG	VNMG	VNMA	W NMG
 D174	 D175	 D176	 D177	 D178	 D179
W NMG	W NMG	W NMG	W NMG	W NMG	W NMG
 D180	 D181	 D182	 D183	 D184	 D185
W NMG	W NMA	CCMT	CCML	CCMT	CCMT
 D186	 D187	 D188	 D189	 D190	 D191

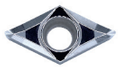
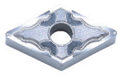
TURNING INSERT FOR ALUMINUM

CCGX	DCGX	SCGX	TCGX	VCGX	
 D192	 D193	 D194	 D195	 D196	

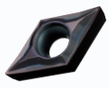
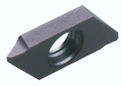
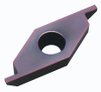
PARTING AND GROOVING INSERTS

Q**W	ZQ MX	Q**D
 D197	 D198	 D199

TURNING & MILLING INSERTS FOR ALUMINUM

APKL	APKT	CCGT	CCGT	CNMG	DCGT
 D200	 D201	 D202	 D203	 D204	 D205
DCGT	**DCGT**	**DCGT**	**DNMG**	**DNMG**	**GIP**
 D206	 D207	 D208	 D209	 D210	 D211
GIP	**SCGT**	**S DGT**	**TCGT**	**TCGT**	**VCGT**
 D212	 D213	 D214	 D215	 D216	 D217
VCGT	**VCGT**	**VCGT**	**WCGT**	**WCGT**	**WCGT**
 D218	 D219	 D220	 D221	 D222	 D223

FOR EXTERNAL TURNING AND BORING

 D224	 D225	 D226	 D227	 D228	 D229
 D230	 D231	 D232	 D233	 D234	 D235

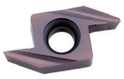
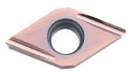
THREADING INSERTS

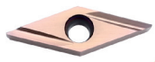
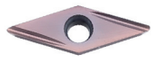
60° gene ral pitch threads	55° general pitch threads	ISO metric threads	United threads	Whitworth threads	British standard taper pipe threads
 D236	 D237	 D238	 D239	 D240	 D241

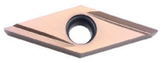
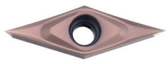
NPT American standard-taper pipa threads	UNJ American standard aerospace andaviation threads	30° DIN405 round threads	Petroleumpipelineth-reads	30° ISO metric threading insert	29° American standard ACME threads
 D242	 D243	 D244	 D245	 D246	 D247

29° American standard ACME threads
 D248

PRECISE DIGITAL-CONTROLLED MACHINE TOOL DEDICATED

APKT-KO	APKT-KO	CCGT-KO	CCGT-KO	CNMG-KO	DCGT-KO
 D249	 D250	 D251	 D252	 D253	 D254

APKT-KO	APKT-KO	CCGT-KO	CCGT-KO	CNMG-KO	DCGT-KO
 D255	 D256	 D257	 D258	 D259	 D260

APKT-KO	APKT-KO
 D261	 D262

TURNING & MILLING INSERTS FOR ALUMINUM

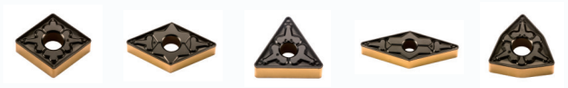
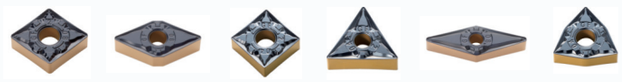
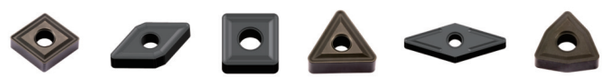
SEEL	SEEL	SEEL	SEEL	SEEL	SEEL
 D263	 D264	 D265	 D266	 D267	 D268

SP KN	SP KR	APKT	APKT	SPML	SP MT
 D269	 D270	 D271	 D272	 D273	 D274

SPML	SPMT	RCKL	RCKL	RDKW	RDKX
 D275	 D276	 D277	 D278	 D279	 D280

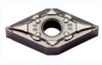
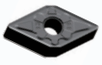
RPEW	WPGT	SDML	APML	APMT	APMT
 D281	 D282	 D283	 D284	 D285	 D286

TROUGH TYPE

MT		M	ap: 1.00~5.00 In: 0.20~0.5
M		M	ap: 1.00~4.00 fn: 0.20~0.5
GF		M	ap: 0.15~2.00 In: 0.08~0.18
GT		M	ap:1.00~5.0 In:0.20~0.50
BF		M	ap: 0.15~2.00 In: 0.08~0.18
BM		M	ap: 0.50~8.50 In: 0.10~0.55
BR		M	ap: 1.50~11.00 In: 0.15~1.00
		M	ap: 0.20~8.00 In: 0.15~0.60
		M	ap: 0.20~12.00 In: 0.10~1.20
MP		M	ap: 0.10~3.6 In: 0.03~0.4
AK		M	ap: 0.10~8.00 In: 0.10~0.50

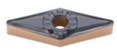
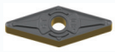
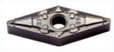
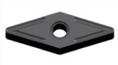
OVERVIEW

CNMG	CNMG	CNMG	CNMG	CNMG	CNMG	CNMG	CNMA
 D287	 D28	 D289	 D290	 D291	 D292	 D293	 D294

DNMG	DNMG	DNMG	DNMG	DNMG	DNMG	DNMA
 D295	 D296	 D297	 D298	 D299	 D300	 D301

SNMG	SNMG	SNMG	SNMG	SNMG	SNMG	SNMG	SNMA
 D302	 D303	 D304	 D305	 D306	 D307	 D308	 D309

TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMA
 D310	 D311	 D312	 D313	 D314	 D315	 D316	 D317	 D318

VNMG	VNMG	VNMG	VNMG	VNMG	VNMG	VNMG
 D319	 D320	 D321	 D322	 D323	 D324	 D325

WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
 D326	D327	D328	D329	D330	D331	D332	D333	D334

GENERAL TURNING POSITIVE INSERTS

CCMT	DCMT	SCMT	TCMT	TCMT	RCMX
D335	D336	D337	D338	D339	D340

ALUMINUM ALLOY TURNING INSERTS SERIES

DCGT	DCGT	TCGT	VCGT
D341	D342	D343	D344

OVERVIEW

FACE MILLING CUTTERS

APMT	APMT	SPMT	SPHX	SEMT	TPKN
 D345	 D346	 D347	 D348	 D349	 D350

45 LOCE MILLING CUTTERS

SEET	SEET	SEMT	SEEN	OFKR	ODMW	ODKT
 D351	 D352	 D353	 D354	 D355	 D356	 D357

MOLDING MILLING CUTTER

RCKT	RCKT	RCKT	RDMW	RPMT	RPMT
 D358	 D359	 D360	 D361	 D362	 D363

75 LACE MILLING CUTTERS

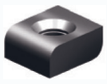
SPKR	SPKN
 D364	 D365

HIGH FEED MILLING

WDMW	WPMT	SDMW	SDMT
 D366	 D367	 D368	 D369

OVERVIEW

C

CN-4e	CND-2R	CN-4R
 0370	 0371	 0372

F

FQ**-	FQ**-	FQ**-
 0373	 0374	 0375

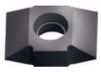
LN

LN**-4e	LN**-DR	LN**-NR	LN**-2NR	LN**-2R	LN**-2R-1	LN**-4R
 0376	 0377	 0378	 0379	 0380	 0381	 0382

SN

SN**-4e	SN**-2R	SN**-DR	SN**-2NR	SN**-4R	SN**-S4R
 0383	 0384	 0385	 0386	 0387	 0388

ZN

ZNEB-
 0389

GRADES OVERVIEW

Grade		Coating	Recommend for application		05	10	15	20	25	30	35	40	45
AG2300		PVD	Ingredient: A PVD Multi-Coating Materia, substrate for a non carbide alloy with high resistance to deformation. This new type of coating can improve the stability of the cutting edge, and And for a variety of cutting speed and feed processing. Application: AG2300 is a ideal materials to process a variety of workpiece material, no matter finishing or general machining using a variety of cutting speed and feed rate for machining. And has a superior performance in a stable machining conditions to process variety of steel, stainless.										
AG2320		PVD	Ingredient: an advanced PVD material with hard AlTiN coating, as well as ultra-fine grain non -alloy matrix. This new type of coating can improve the stability of the cutting edge, and And for a variety of cutting speed and feed processing. Application: AG2320 is a ideal material for general machining a variety of steel, stainless steel, high temperature alloys, titanium, iron and non-ferrous metal materials. It can use a variety of cutting speed and feed rate for machining, edge has better toughness, even can be used to high speed interrupted cutting.										
AG2330		PVD	Ingredient: an advanced PVD Al TIN coating material, substrate for a non carbide alloy with high resistance to deformation. The cutting speed can be increased by 50% -100% Application: AG2330 is a ideal materials to process a variety of workpiece material.no matter finishing or general machining. Has a higher cutting speed. Also has a superior performance in a stable machining conditions to process variety of steel, stainless steel, cast iron, non-ferrous metals and super alloy. Even in the hardened material and the processing of short-chipping materials, also has good performance.										
GS	1320		Ingredient: carbide, cobalt 10%, ultra-fine grain material. Application: when processing aluminum, aluminum alloy, copper, cast iron, it is not easy to stick the knife. Has excellent cutting force, a longer life and reliable performance.										
GM													
GT													
GL													
GS	2221		Ingredient: Metal ceramic material with PCD / TiN / TiCN / and TiN composite coating. Application: Suit for processing the many kinds of carbon material, alloy, stainless steel on the condition of finishing or common machining with high speed. There is also a excellent processing performance with milling the cast iron and nodular cast iron. The carbide inserts will have a long tool life and and outstanding finishing machining performance.										
GM													
GT													
GL													
GS	1322		Ingredient: metal ceramic material with PCD / TiN / TiCN / and TiN composite coating. Application: Suit for processing the many kinds of carbon material, alloy, stainless steel on the condition of finishing or common machining with high speed.										
GM													
GT													
GL													

GRADES OVERVIEW

PVD COATING

Grade		Coating	Recommend for application	05	10	15	20	25	30	35	40	45
GS	1221	PVD	Ingredient: A PVD Multi-Coating Material, substrate for a non carbide alloy with high resistance to deformation. This new type of coating can improve the stability of the cutting edge, and And for a variety of cutting speed and feed processing. Application: GS1221 is a ideal materials to process a variety of workpiece material,no matter finishing or general machining using a variety of cutting speed and feed rate for machining. And has a superior performance in a stable machining conditions to process variety of steel, stainless.									
GM												
GT	1220	PVD										
GL												
GS	3420	PVD	Ingredient: a super fine grain Tungsten carbide material with advanced PVD AlTiN coating. Application: GS3420 material suit for the processing the high temperature alloy material efficiently while the cutting speed is twice higher with advanced PVD coating compared with common PVD coating.									
GM												
GT	3430	PVD										
GL												
GS	2330	PVD	Ingredient: a super fine grain, high cobalt carbide material with advanced PVD AlTiN coating. Application: GS2330 KC5510 material with the same advanced PVD coating material, the matrix containing 10% of cobalt carbide material of fine grain, high cobalt intermittent cutting improved safety, while fine grain We in the high-speed cutting, have a good anti-hard variant capabilities for high-temperature alloys generally severe intermittent cutting machining.									
GM												
GT	2340	PVD										
GL												
GS	1299		Ingredient: Super We/Co micro grain size solid carbide material, which has a little abrasive grain. Application: GL1099 material can keep good Wear Performance for processing the Wrought Steel, austenite stainless steel, nonmetal Extremely high temperature workpiece.									
GM												
GT												
GL												
GS	2100	CVD	Ingredient: New advanced material which is High cobalt and has non-deformability, coated with excellent emplastic MTCVD-TiCN-AL203 coating. Application: Suit for processing the different kind of steel, cast iron, martensite stainless, PH stainless steel. Wrought Steel on condition of half finishing machining and finishing machining. There is a outstanding processing performance, super long tool life, and super quality of processing surface for the workpiece.									
GM												
GT												
GL												
GS	2230	CVD	Ingredient: solid carbide material which is High cobalt and has good toughness, covered with excellent emplastic MTCVD-TiCN-AL203 coating. Application: Suit for processing the different kind of steel material, cast iron, martensite stainless steel. The carbide inserts has good resistance to deformation, excellent intensity on inserts tips. Composite coating will make a good wear -resistance for the tool.									
GM												
GT												
GL												

GRADES OVERVIEW

PVD COATING

Grade		Coating	Recommend for application		05	10	15	20	25	30	35	40	45
GS	4300	DLC	Ingredient: solid carbide material with coating, which including performance of diamond material. Application: Suit for processing the alloy, stainless steel, different kinds of aluminum on the condition of high-speed and finishing machining keeping good smoothness, better wear-resistance, and longer tool life.										
SH													
SO													
GL													

GRADES OVERVIEW

PVD COATING

Grade		Coating	Recommend for application	05	10	15	20	25	30	35	40	45
AG2300		PVD	Ingredient: A PVD Multi-Coating Materia, substrate for a non carbide alloy with high resistance to deformation. This new type of coating can improve the stability of the cutting edge, and And for a variety of cutting speed and feed processing. Application: AG2300 is a ideal materials to process a variety of workpiece material,no matter finishing or general machining using a variety of cutting speed and feed rate for machining. And has a superior performance in a stable machining conditions to process variety of steel, stainless.		■	■	■					
AG2310		PVD	Ingredient: an advanced PVD material with hard Al TIN coating, as well as ultra-fine grain non -alloy matrix. This new type of coating can improve the stability of the cutting edge, and And for a variety of cutting speed and feed processing. Application: AG2310 is a ideal material for general machining a variety of steel, stainless steel, high temperature alloys, titanium, iron and non-ferrous metal materials. It can use a variety of cutting speed and feed rate for machining, edge has better toughness, even can be used to high speed interrupted cutting.				■	■	■			
AG2330		PVD	Ingredient: an advanced PVD AlTiN coating material, substrate for a non carbide alloy with high resistance to deformation. The cutting speed can be increased by 50% -100% Application: AG2330 is a ideal materials to process a variety of workpiece material. no matter finishing or general machining. Has a higher cutting speed. Al so has a superior performance in a stable machining conditions to process variety of steel, stainless steel, cast iron, non-ferrous metals and super alloy. Even in the hardened material and the processing of short-chipping materials, also has good performance.		■	■	■					
GS	3300		Ingredient: carbide, cobalt 10%, ultra-fine grain material. Application: when processing aluminum, aluminum alloy, copper, cast iron, it is not easy to stick the knife. Has excellent cutting force, a longer life and reliable performance.		■	■	■					
GM				■	■	■	■					
GT					■	■	■					
GL					■	■	■					
GS	3310		Ingredient: Metal ceramic material with PCD / TiN / TiCN / and TiN composite coating. Application: Suit for processing the many kinds of carbon material, alloy, stainless steel on the condition of finishing or common machining with high speed. There is also a excellent processing performance with milling the cast iron and nodular cast iron. The carbide inserts will have a long tool life and and outstanding finishing machining performance.	■	■	■						
GM				■	■	■						
GT												
GL												
GS	3320		Ingredient: metal ceramic material with PCD / TiN / TiCN / and TiN composite coating. Application: Suit for processing the many kinds of carbon material, alloy, stainless steel on the condition of finishing or common machining with high speed.	■	■	■						
GM				■	■	■						
GT												
GL												

GRADES OVERVIEW

PVD COATING

Grade		Coating	Recommend for application	05	10	15	20	25	30	35	40	45
GS	2300	PVD	Ingredient: super fine grain size nonmetal material which has good toughness, and with advanced PVD AlTiN coating. Application: Be used to processing the different kind steel, stainless steel, high temperature alloy, TITANIUM, forging material and nonmetal material on the common machine.				■	■	■			
GM							■	■	■			
GT	2301	PVD					■	■	■			
GL							■	■	■			
GS	2310	PVD	Ingredient: a super fine grain Tungsten carbide material with advanced PVD AlTiN coating. Application: GS2310 material suit for the processing the high temperature alloy material efficiently. While the cutting speed is twice higher with advanced PVD coating compared with common PVD coating.				■	■	■			
GM							■	■	■			
GT	2311	PVD					■	■	■			
GL							■	■	■			
GS	2320	PVD	Ingredient: a super fine grain, high cobalt carbide material with advanced PVD AlTiN coating. Application: GS2320 KC5510 material with the same advanced PVD coating material, the matrix containing 10% of cobalt carbide material of fine grain, high cobalt intermittent cutting improved safety, while fine grain We in the high-speed cutting, have a good anti-hard variant capabilities for high-temperature alloys generally severe intermittent cutting machining.				■	■	■			
GM							■	■	■			
GT	2321	PVD					■	■	■			
GL							■	■	■			
GS	2290		Ingredient: Super We/Co micro grain size solid carbide material, which has a little abrasive grain. Application: GL2290 material can keep good Wear Performance for processing the Wrought Steel, austenite stainless steel, nonmetal Extremely high temperature workpiece.			■	■					
GM					■	■	■					
GT					■	■	■					
GL												
GS	GTK10	CVD	Ingredient: New advanced material which is High cobalt and has non-deformability, coated with excellent emplastic MTCVD-TiCN-AL203 coating. Application: Suit for processing the different kind of steel, cast iron, martensite stainless, PH stainless steel. Wrought Steel on condition of half finishing machining and finishing machining. There is a outstanding processing performance, super long tool life, and super quality of processing surface for the workpiece.				■	■	■			
GM								■	■	■		
GT												
GL												
GS	4220	CVD	Ingredient: Solid carbide material which is High cobalt and has good toughness, covered with excellent emplastic MTCVD-TiCN-AL203 coating. Application: Suit for processing the different kind of steel material, cast iron, martensite stainless steel. The carbide inserts has good resistance to deformation, excellent intensity on inserts tips. Composite coating will make a good wear -resistance for the tool.				■	■	■			
GM								■	■	■		
GT												
GL												

GRADES OVERVIEW

PVD COATING

Grade		Coating	Recommend for application		05	10	15	20	25	30	35	40	45
GS	4300	DLC	Ingredient: solid carbide material with coating, which including performance of diamond material.										
SH			Application: Suit for processing the alloy, stainless steel, different kinds of aluminum on the condition of high-speed and finishing machining keeping good smoothness, better wear-resistance, and longer tool life.										
SO													
GL													

GENERAL TURNING INSERTS CODE CLASSIFICATION

Inserts Shape/Code

 A	 B	 C
 D	 E	 H
 K	 L	 M
 O	 P	 R
 S	 T	 T
 V	 W	Others

Inserts Shape

Metric

Code	With/ without hole	With/without chip breaker	Section plane of insert	Code	With/without hole	With/without chip breaker	Section plane of insert
B	With	Without		N	Without	Without	
H	With	Single-side		R	Without	Single-side	
C	With	Without		F	Without	Double-side	
J	With	Double-side		A	With	Without	
W	With	Without		M	With	Single-side	
T	With	Single-side		G	With	Double-side	
A	With	Without		X			Special
U	With	Double-side					

Chip Breaker and clamping system

D N M G

Clearance angle of main cutting edge

Code	Clearance angle	Code	Clearance angle
A		B	
C		D	
E		F	
G		N	
P		O	Other Clearance angle

Tolerance

	Tolerance range	Inscribed circle tolerance(mm)	Thickness S Tolerance(mm)	(Reference) Details of M-class tolerance (Identied by shape and size) Nose height tolerance(mm)						
A	±0.005	± 0.025	± 0.025	Inscribed circle	Regular triangle	Square	Diamond with80°	Diamond with55 °	Diamond with35°	Round
F	±0.005	±0.013	± 0.025	6.35	±0.08	±0.08	±0.08	±0.11	±0.16	
C	±0.013	±0.025	± 0.025	9.525	±0.08	±0.08	±0.08	±0.11	±0.16	
H	±0.013	±0.013	± 0.025	12.7	±0.13	±0.13	±0.13	±0.15		
E	±0.025	± 0.025	± 0.025	15.875	±0.15	±0.15	±0.15	±0.18		
G	±0.025	±0.025	±0.13	19.05	±0.15	±0.15	±0.15	±0.18		
J	±0.005	±0.05-±0.13	± 0.025	25.4		±0.18				
K	±0.013	±0.05-±0.13	± 0.025	Tolerance inscribed circle Φ D1(mm)						
L	±0.025	± 0.05- ± 0.13	± 0.025	Inscribed circle	Regular triangle	Square	Diamond with80°	Diamond with55 °	Diamond with35°	Round
M	±0.08-±0.18	± 0.05- ± 0.13	±0.13	6.35	±0.05	±0.05	±0.05	±0.05	±0.05	
N	±0.08-±0.18	±0.05-±0.13	± 0.025	9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
U	± 0.1308- ± 0.38	± 0.08- ± 0.25	±0.13	12.7	±0.08	±0.08	±0.08	±0.08		±0.08
				15.875	±0.10	±0.10	±0.10	±0.10		±0.10
				19.05	±0.10	±0.10	±0.10	±0.10		±0.10
				25.4		±0.13				±0.13

GENERAL TURNING INSERTS CODE CLASSIFICATION

Diameter of IC (mm)	Insert shape							
	C	D	R	S	T	V	W	K
								
3.97					06			
5.0			05					
5.56					09			
6.0	06		06					
6.35					11			
8.0	09		08					
9.525		07	09	09	16		06	16
10.0			10					
12.0	12	11	12			11		
12.7	16	16	12	12	22		08	
15.875			15	15	27	16	10	
16.0	19	15	16					
19.05		19	19	19	33			
20.0			20			22		
25.0	25		25		38			
25.4			25	25				
31.75			31		44			
32			32		53			
Length of Cutting edge								

Code	Insert thickness(mm) ★
00	0.79
T0	0.99
01	1.59
T1	1.98
02	2.38
T2	2.58
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.56
T5	5.95
06	6.35
T6	6.75
07	7.94
09	9.52
T9	9.72
11	11.11
12	12.70
Insert thickness	

15 04 08 FW

4 3 2

Inscribed circle	
Code	Diameter Tof IC (mm)
2	6.35
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4

Nose radius Code	
Code	Nose radius (mm)
0	No radius
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
32	3.2
X	Other
Diameter of insert (Metric)	Round inser

Thickness	
Code	Thickness
2	6.35
3	6.35
4	6.35
5	6.35
6	6.35

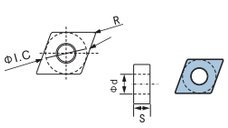
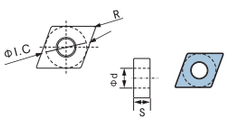
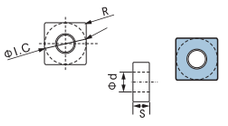
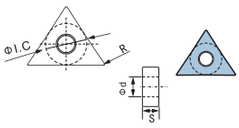
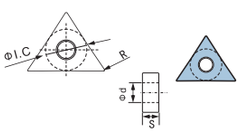
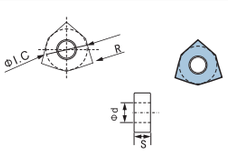
Nose radius	
Code	Nose radius (mm)
0	0.2
	0.4
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4

Chip Breaker Code		

INSERT FOR STEEL

FINISHING

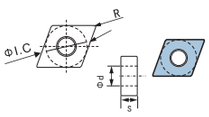
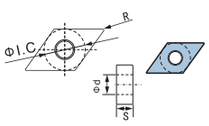
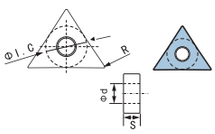
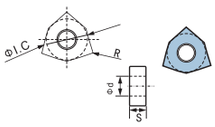
SHAPE OF NEGATIVE RAKE INSERTS

Shape of insert	Type		Dimension (mm)				Grade recommendation									
							CVD coating grade		PVD coating grade						Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2311	GS2321	GS3310	GS3300
	CNMG	090304-FW	9.525	3.18	3.81	0.4	•	•					•				
		090308-FW	9.525	3.18	3.81	0.8	•	•					•				
		120404-FW	12.7	4.76	5.16	0.4	•	•					•				
		120408-FW	12.7	4.76	5.16	0.8	•	•					•				
	DNMG	110404-FW	9.525	4.76	3.81	0.4	•	•					•				
		110408-FW	9.525	4.76	3.81	0.8	•	•					•				
		150404-FW	12.7	4.76	5.16	0.4	•	•					•				
		150408-FW	12.7	4.76	5.16	0.8	•	•					•				
		150604-FW	12.7	6.35	5.16	0.4	•	•					•				
		150608-FW	12.7	6.35	5.16	0.8	•	•					•				
	SNMG	120408-FW	12.7	4.76	5.16	0.8	•	•					•				
		120412-FW	12.7	4.76	5.16	1.2	•	•					•				
	TNMG	160404-FW	9.525	4.76	3.81	0.4	•	•					•				
		160408-FW	9.525	4.76	3.81	0.8	•	•					•				
		220404-FW	12.7	4.76	5.16	0.4	•	•					•				
		220408-FW	12.7	4.76	5.16	0.8	•	•					•				
	VNMG	160404-FW	9.525	4.76	3.81	0.4	•	•					•				
		160408-FW	9.525	4.76	3.81	0.8	•	•					•				
	WNMG	060404-FW	9.525	4.76	3.81	0.4	•	•					•				
		060408-FW	9.525	4.76	3.81	0.8	•	•					•				
		060412-FW	9.525	4.76	3.81	1.2	•	•					•				
		080404-FW	12.7	4.76	5.16	0.4	•	•					•				
		080408-FW	12.7	4.76	5.16	0.8	•	•					•				

INSERT FOR STEEL

FINISHING

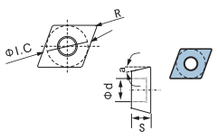
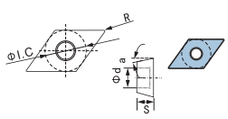
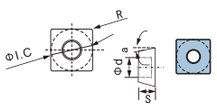
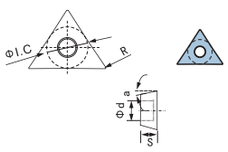
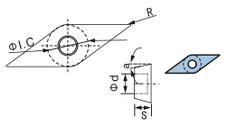
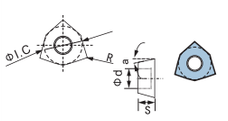
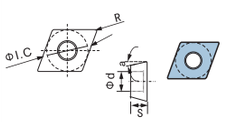
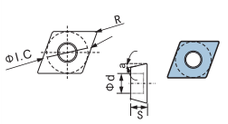
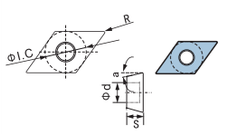
SHAPE OF NEGATIVE RAKE INSERTS

Shape of insert	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNGG	090402L/R-S	9.525	4.76	3.81	0.2														
		09040L4/R-S	9.525	4.76	3.81	0.4														
		090408L/R-S	9.525	4.76	3.81	0.8														
	DNGG	110402L/R-S	9.525	4.76	3.81	0.2														
		110404L/R-S	9.525	4.76	3.81	0.4														
		110408L/R-S	9.525	4.76	3.81	0.8														
	TNGG	110402L/R-S	6.35	4.76	2.4	0.2						•								
		110404L/R-S	6.35	4.76	2.4	0.4						•								
		110408L/R-S	6.35	4.76	2.4	0.8						•								
		160402L/R-S	9.525	4.76	3.81	0.2						•								
		160404L/R-S	9.525	4.76	3.81	0.4						•								
		160408L/R-S	9.525	4.76	3.81	0.8						•								
	WNGG	06040L2/R-S	9.525	4.76	3.81	0.2														
		06040L4/R-S	9.525	4.76	3.81	0.4														
		060408L/R-S	9.525	4.76	3.81	0.8														

INSERT FOR STEEL

FINISHING

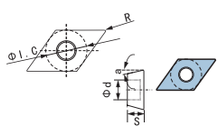
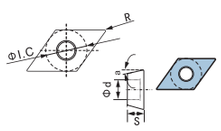
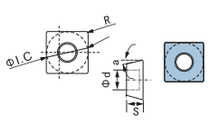
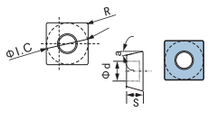
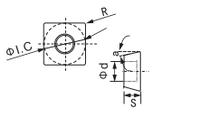
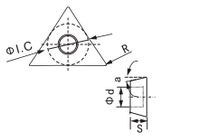
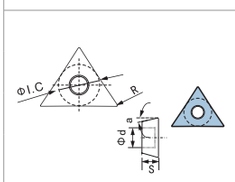
SHAPE OF POSITIVE RAKE INSERTS

Shape of insert	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060202-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		06020-4FW	6.35	2.38	2.8	0.4	7	•	•					•							
		09T302-FW	9.525	3.97	4.4	0.2	7	•	•					•							
		09T308-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		120404-FW	9.525	3.97	4.4	0.8	7	•	•					•							
	DCMT	070202-FW	12.7	4.76	5.5	0.4	7	•	•					•							
		070204-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		11 T302-FW	6.35	2.38	2.8	0.4	7	•	•					•							
		11T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		11T308-FW	9.525	3.97	4.4	0.8	7	•	•					•							
	SCMT	09T304-FW	9.525	3.18	4.4	0.4	7	•	•					•							
		09T308-FW	9.525	3.18	4.4	0.8	7	•	•					•							
	TCMT	090220-FW	5.56	2.38	2.5	0.2	7	•	•					•							
		090204-FW	5.56	2.38	2.5	0.4	7	•	•					•							
		110302-FW	6.35	3.18	2.8	0.2	7	•	•					•							
		110304-FW	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-FW	6.35	3.18	2.8	0.8	7	•	•					•							
		16T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
	VCMT	110302-FW	6.35	3.18	2.8	0.2	7	•	•					•							
		110304-FW	6.35	3.18	2.8	0.4	7	•	•					•							
	WPMT	040202-FW	6	2.38	2.5	0.2	11	•	•					•							
		040204-FW	6	2.38	2.5	0.4	11	•	•					•							
	CCGT	06020L2/ R-S	6.35	2.38	2.8	0.2	7						•								
		06020L4/ R-S	6.35	2.38	2.8	0.4	7						•								
		09T302L/R-S	9.525	3.97	4.4	0.2	7						•								
		09T304L/R-S	9.525	3.97	4.4	0.4	7						•								
		09T308L/R-S	9.525	3.97	4.4	0.8	7						•								
		120402L/R-S	12.7	4.76	5.5	0.2	7						•								
		120404L/R-S	12.7	4.76	5.5	0.4	7						•								
		120408L/R-S	12.7	4.76	5.5	0.8	7														
	CCGH	06020L2/ R-S	6.35	2.38	2.8	0.2	7														
		06020L4/ R-S	6.35	2.38	2.8	0.4	7														
	DCET	070201L/R-S	6.35	2.38	2.8	0.1	7														
		07020L2/R-S	6.35	2.38	2.8	0.2	7														
		07020L4/R-S	6.35	2.38	2.8	0.4	7														
		11T301L/R-S	9.525	3.97	4.4	0.1	7														
		11T302L/R-S	9.525	3.97	4.4	0.2	7														
		11T304L/R-S	9.525	3.97	4.4	0.4	7														

INSERT FOR STEEL

FINISHING

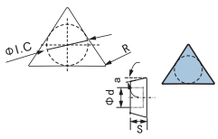
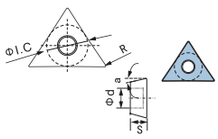
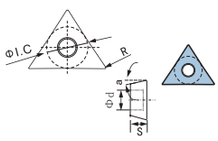
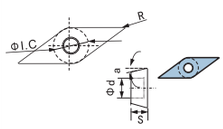
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	DCGT	070202L/R-S 070204L/R-S	6.35 6.35	2.38 2.38	2.8 2.8	0.2 0.4	7 7														
		11T302L/R-S 11T304L/R-S	9.525 9.525	3.97 3.97	4.4 4.4	0.2 0.4	7 7														
	OPET	070201L/R-S 070202L/R-S	6.35 6.35	2.38 2.38	2.8 2.8	0.1 0.2	11 11														
		11T301L/R-S 11T302L/R-S	9.525 9.525	3.97 3.97	4.4 4.4	0.1 0.2	11 11														
	SCGT	09T304L/R-S 09T308L/R-S	9.525 9.525	3.97 3.97	4.4 4.4	0.4 0.8	7 7														
	SPGH	090304L/R-S 090308L/R-S	9.525 9.525	3.18 3.18	4.4 4.4	0.4 0.8	11 11														
		120304L/R-S 120308L/R-S	12.7 12.7	3.18 3.18	5.5 5.5	0.4 0.8	11 11														
	SPGT	090304L/R-S 090308L/R-S	9.525 9.525	3.18 3.18	4.4 4.4	0.4 0.8	11 11														
		120304L/R-S 120308L/R-S	12.7 12.7	3.18 3.18	5.5 5.5	0.2 0.4	11 11														
	TCGT	110302L/R-S 110304L/R-S	6.35 6.35	3.18 3.18	2.8 2.8	0.2 0.4	7 7							• •							• •
	TPGH	090202L/R-S 090204L/R-S	5.56 5.56	2.38 2.38	2.5 2.5	0.2 0.4	11 11							• •							• •
		110202L/R-S 110204L/R-S	6.35 6.35	2.38 2.38	3.4 3.4	0.2 0.4	11 11							• •							• •
		110302L/R-S 110304L/R-S	6.35 6.35	3.18 3.18	3.4 3.4	0.2 0.4	11 11							• •							• •
		110308L/R-S 160302L/R-S	6.35 9.525	3.18 3.18	3.4 4.4	0.8 0.2	11 11							• •							• •
		160304L/R-S 160308L/R-S	9.525 9.525	3.18 3.18	4.4 4.4	0.4 0.8	11 11							• •							• •

INSERT FOR STEEL

FINISHING

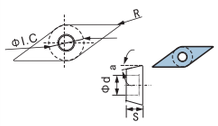
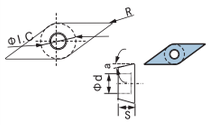
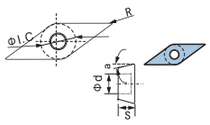
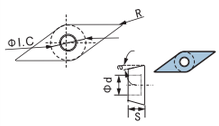
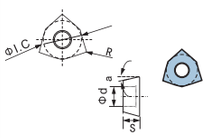
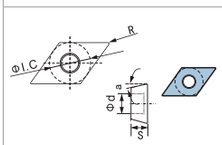
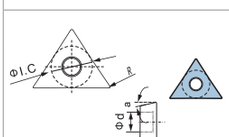
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	TPGR	090202L/R-S	5.56	2.38		0.2	11														
		09020L4/ R-S	5.56	2.38		0.4	11														
		090208L/R-S	5.56	2.38		0.8	11														
	TPET	110301L/R-S	6.35	3.18	3.4	0.1	11														
		110302L/R-S	6.35	3.18	3.4	0.2	11														
	TPGX	09020L2/R-S	5.56	2.38	2.5	0.2	11						•								
		09020L4/R-S	5.56	2.38	2.5	0.4	11						•								
		090208L/R-S	5.56	2.38	2.5	0.8	11						•								
		110302L/R-S	6.35	3.18	3.4	0.2	11						•								
		110304L/R-S	6.35	3.18	3.4	0.4	11						•								
		110308L/R-S	6.35	3.18	3.4	0.8	11						•								
	VBET	110301L/R-S	6.35	3.18	2.8	0.1	5						•								
		110302L/R-S	6.35	3.18	2.8	0.2	5														

INSERT FOR STEEL

FINISHING

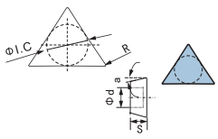
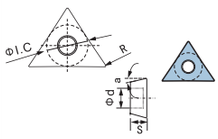
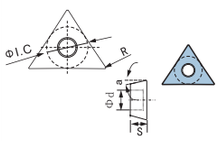
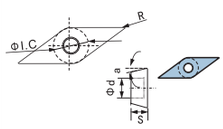
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	VBGT	110301L/R-S	6.35	3.18	2.8	0.1	5							•							
		110302L/R-S	6.35	3.18	2.8	0.2	5							•							
		110304L/R-S	6.35	3.18	2.8	0.4	5							•							
		160402L/R-S	9.525	4.76	4.4	0.2	5							•							
		160404L/R-S	9.525	4.76	4.4	0.4	5							•							
	VCGT	160404L/R-S	9.525	4.76	4.4	0.4	7							•							
		160408L/R-S	9.525	4.76	4.4	0.8	7							•							
	VDGX	160302L/R-S	9.525	3.18	4.4	0.2	15														
		160304L/R-S	9.525	3.18	4.4	0.4	15														
	VPET	110301L/R-S	6.35	3.18	2.8	0.1	11														
		110302L/R-S	6.35	3.18	2.8	0.2	11														
	WPGT	060304L/R-S	9.525	4.76	4.4	0.4	11														
		06030L8/ R-S	9.525	4.76	4.4	0.8	11														
	DCET	07020L4/ R-S	6.35	2.38	2.8	0.4	7														
		11 T302L/R-S	9.525	3.97	4.4	0.2	7														
		11 T304L/R-S	9.525	3.97	4.4	0.4	7														
	TNGG	160404L/R-S	9.525	3.81	3.81	0.4															
		160408L/R-S	9.525	3.81	3.81	0.8															

INSERT FOR STEEL

FINISHING

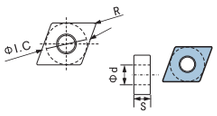
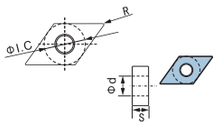
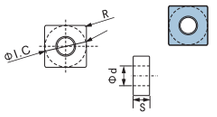
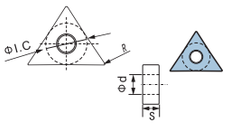
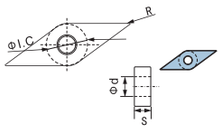
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	TPGR	090202L/R-S	5.56	2.38		0.2	11														
		09020L4/ R-S	5.56	2.38		0.4	11														
		090208L/R-S	5.56	2.38		0.8	11														
	TPET	110301L/R-S	6.35	3.18	3.4	0.1	11														
		110302L/R-S	6.35	3.18	3.4	0.2	11														
	TPGX	09020L2/R-S	5.56	2.38	2.5	0.2	11						•								
		09020L4/R-S	5.56	2.38	2.5	0.4	11						•								
		090208L/R-S	5.56	2.38	2.5	0.8	11						•								
		110302L/R-S	6.35	3.18	3.4	0.2	11						•								
		110304L/R-S	6.35	3.18	3.4	0.4	11						•								
		110308L/R-S	6.35	3.18	3.4	0.8	11						•								
	VBET	110301L/R-S	6.35	3.18	2.8	0.1	5						•								
		110302L/R-S	6.35	3.18	2.8	0.2	5														

INSERT FOR STEEL

FINISHING

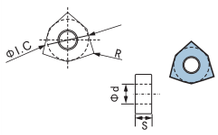
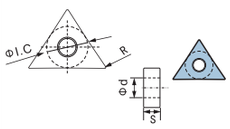
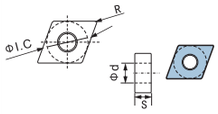
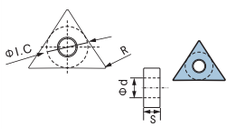
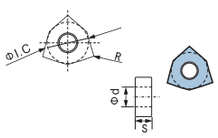
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	090304-MD	9.525	3.18	3.81	0.4	•	•					•							
		090308-MD	9.525	3.18	3.81	0.8	•	•					•							
		120404-MD	12.7	4.76	5.16	0.4	•	•					•							
		120408-MD	12.7	4.76	5.16	0.8	•	•					•							
		120412-MD	12.7	4.76	5.16	2	•	•					•							
		160608-MD	15.875	6.35	6.35	0.8	•	•					•							
		160612-MD	15.875	6.35	6.35	12	•	•					•							
		190608-MD	19.05	6.35	7.93	0.8	•	•					•							
		190612-MD	19.05	6.35	7.93	1.2	•	•					•							
	DNMG	110404-MD	9.525	4.76	3.81	0.4	•	•					•							
		110408-MD	9.525	4.76	3.81	0.8	•	•					•							
		110412-MD	9.525	4.76	3.81	1.2	•	•					•							
		150404-MD	12.7	4.76	5.16	0.4	•	•					•							
		15040-8MD	12.7	4.76	5.16	0.8	•	•					•							
		150412-MD	12.7	4.76	5.16	12	•	•					•							
		15060-4MD	12.7	6.35	5.16	0.4	•	•					•							
		150608-MD	12.7	6.35	5.16	0.8	•	•					•							
		150612-MD	12.7	6.35	5.16	2	•	•					•							
	SNMG	090304-MD	9.525	3.18	3.81	0.4	•	•					•							
		090308-MD	9.525	3.18	3.81	0.8	•	•					•							
		120404-MD	12.7	4.46	5.16	0.4	•	•					•							
		120408-MD	12.7	4.76	5.16	0.8	•	•					•							
		120412-MD	12.7	4.76	5.16	12	•	•					•							
		150608-MD	15.875	6.35	6.35	0.8	•	•					•							
		150612-MD	15.875	6.35	6.35	1.2	•	•					•							
		150616-MD	15.875	6.35	6.35	6	•	•					•							
		190608-MD	19.05	6.35	7.93	0.8	•	•					•							
		190612-MD	19.05	6.35	7.93	1.2	•	•					•							
	TNMG	160404-MD	9.525	4.76	3.81	0.4	•	•					•							
		160408-MD	9.525	4.76	3.81	0.8	•	•					•							
		160412-MD	9.525	4.76	3.81	2	•	•					•							
		220404-MD	12.7	4.76	5.16	0.4	•	•					•							
		220408-MD	12.7	4.76	5.16	0.8	•	•					•							
		220412-MD	12.7	4.76	5.16	2	•	•					•							
	VNMG	160404-MD	9.525	4.76	3.81	0.4	•	•					•							
		160408-MD	9.525	4.76	3.81	0.8	•	•					•							
		160412-MD	9.525	4.76	3.81	12	•	•					•							

INSERT FOR STEEL

SEMI FINISHING

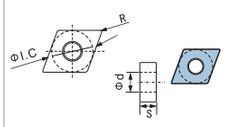
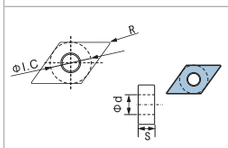
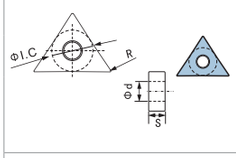
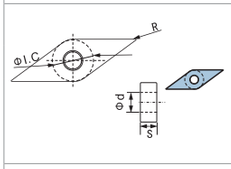
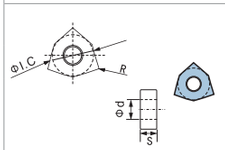
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	WNMG	060404-MD 060408-MD	9.525 9.525	4.76 4.76	3.81 3.81	0.4 1.2	• •	• •					• •							
		060412-MD 080404-MD	9.525 12.7	4.76 4.76	3.81 5.16	1.2 0.4	• •	• •					• •							
		080404-MD 080412-MD	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
	TNMG	160404-HQ 160408-HQ	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
	CNMG	120404-MA 120408-MA	12.7 12.7	4.76 4.76		0.4 0.8	• •	• •					• •							
	TNMG	160404-MA 160408-MA	9.525 9.525	4.76 4.76		0.4 0.8	• •	• •					• •							
	WNMG	080404-MA 080408-MA	12.7 12.7	4.76 4.76		0.4 0.8	• •	• •					• •							

INSERT FOR STEEL

FINISHING

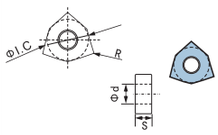
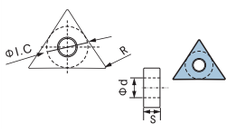
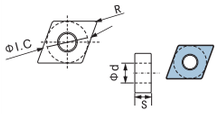
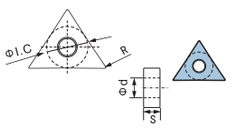
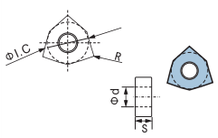
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	WNMG	120404-TM	12.7	4.76	5.16	0.4	•	•					•							
		120408-TM	12.7	4.76	5.16	0.8	•	•					•							
		120412-TM	12.7	4.76	5.16	1.2	•	•					•							
	TNMG	150408-TM	12.7	4.76	5.16	0.8	•	•					•							
		150608-TM	12.7	6.35	5.16	0.8	•	•					•							
	CNMG	160404-TM	9.525	4.76	3.81	0.4	•	•					•							
		160408-TM	9.525	4.76	3.81	0.8	•	•					•							
		160412-TM	9.525	4.76	3.81	1.2	•	•					•							
		220404-TM	12.7	4.76	5.16	0.4	•	•					•							
		220408-TM	12.7	4.76	5.16	0.8	•	•					•							
		220412-TM	12.7	4.76	5.16	1.2	•	•					•							
	TNMG	160404-TM	9.525	4.76	3.81	0.4	•	•					•							
		160408-TM	9.525	4.76	3.81	0.8	•	•					•							
		160412-TM	9.525	4.76	3.81	1.2	•	•					•							
	WNMG	080404-TM	12.7	4.76	5.16	0.4	•	•					•							
		080408-TM	12.7	4.76	5.16	0.8	•	•					•							
		080412-TM	12.7	4.76	5.16	1 .2	•	•					•							

INSERT FOR STEEL

SEMI FINISHING

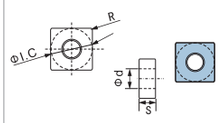
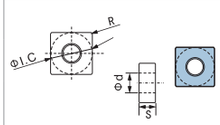
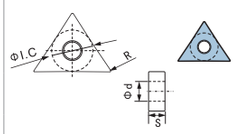
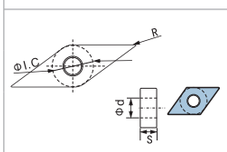
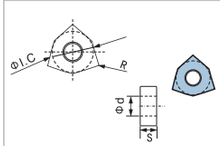
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	WNMG	060404-MD 060408-MD	9.525 9.525	4.76 4.76	3.81 3.81	0.4 1.2	• •	• •					• •							
		060412-MD 080404-MD	9.525 12.7	4.76 4.76	3.81 5.16	1.2 0.4	• •	• •					• •							
		080404-MD 080412-MD	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
	TNMG	160404-HQ 160408-HQ	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
	CNMG	120404-MA 120408-MA	12.7 12.7	4.76 4.76		0.4 0.8	• •	• •					• •							
	TNMG	160404-MA 160408-MA	9.525 9.525	4.76 4.76		0.4 0.8	• •	• •					• •							
	WNMG	080404-MA 080408-MA	12.7 12.7	4.76 4.76		0.4 0.8	• •	• •					• •							

INSERT FOR STEEL

SEMI FINISHING

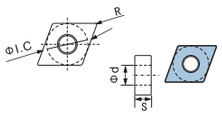
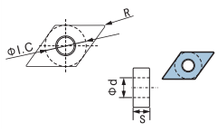
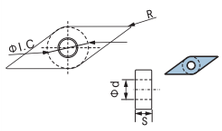
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	SNMG	120404L/R-N	12.7	4.76	5.16	0.4	•						•							
		120404L/R-N	12.7	4.76	5.16	0.8	•						•							
	SNGG	09030L4/R-N	9.525	3.18	3.81	0.4														
		09030L8/R-N	9.525	3.18	3.81	0.8														
		120404L/R-N	12.7	4.76	5.16	0.4														
		120408L/R-N	12.7	4.76	5.16	0.8														
	TNGG	110302L/R-N	6.35	3.81	2.4	0.2														
		110304L/R-N	6.35	3.81	2.4	0.4														
		110308L/R-N	6.35	3.81	2.4	0.8														
		160304L/R-N	9.525	3.81	3.81	0.4														
		160402L/R-N	9.525	4.76	3.81	0.2														
		160404L/R-N	9.525	4.76	3.81	0.4														
		160408L/R-N	9.525	4.76	3.81	0.8														
		160412L/R-N	9.525	4.76	3.81	12														
		160416L/R-N	9.525	4.76	3.81	1.6	•						•							
		220404L/R-N	12.7	4.76	5.16	0.4	•						•							
		220408L/R-N	12.7	4.76	5.16	0.8														
		220412L/R-N	12.7	4.76	5.16	1.2														
	VNGG	110302L/R-N	6.35	3.18	2.4	0.2														
		110304L/R-N	6.35	3.18	2.4	0.4														
		160402L/R-N	9.525	4.76	3.81	0.2														
		160404L/R-N	9.525	4.76	3.81	0.4														
	WNGG	06040L4/R-N	9.525	4.76	3.81	0.8														
		06040L8/R-N	9.525	4.76	3.81	12														

INSERT FOR STEEL

SEMI FINISHING

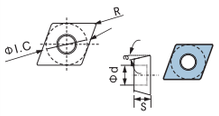
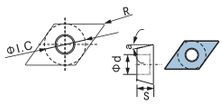
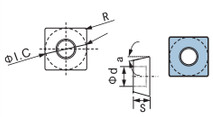
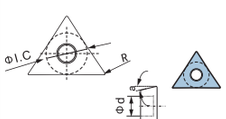
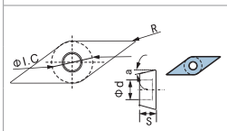
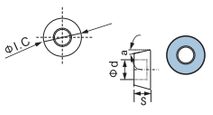
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNGG	09040L4/R-H 09040L8/R-H	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8							• •							
		120404L/R-H 120408L/R-H	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8							• •							
	DNGG	110404L/R-H 110408L/R-H	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8							• •							
		150404L/R-H 150408L/T-H	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8							•							
	VNGG	160402L/R-H 160404L/R-H	9.525 9.525	4.76 4.76	3.81 3.81	0.2 0.4														
		160408L/R-H	9.525	4.76	3.81	0.8														

INSERT FOR STEEL

SEMI FINISHING

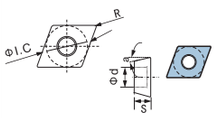
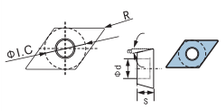
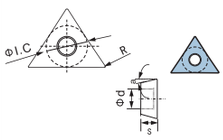
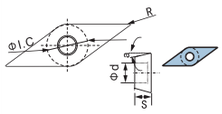
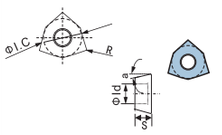
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060204-MD	6.35	2.38	2.8	0.4	7	•	•					•							
		060208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		091304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		091308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		120404-MD	12.7	4.76	5.5	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	2	7	•	•					•							
	DCMT	070204-MD	6.35	2.38	2.8	0.4	7	•	•					•							
		070208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		111304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		111308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		111312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
	SCMT	091304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		091308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		091312-MD	9.525	3.97	4.4	2	7	•	•					•							
		120404-MD	9.525	4.76	5.5	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	2	7	•	•					•							
	TCMT	090204-MD	5.56	2.38	2.5	0.4	7	•	•					•							
		090208-MD	5.56	2.38	2.5	0.8	7	•	•					•							
		110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
		110312-MD	6.35	3.18	2.8	2	7	•	•					•							
		161304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		161308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		161312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
	VCMT	110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
	VBMT	160404-MD	9.525	4.76	4.4	0.4	5	•	•					•							
		160408-MD	9.525	4.76	4.4	0.8	5	•	•					•							
	RCMT	0803M0E-R1	8	2.38	3.3		7			•		•									
		10T3M0E-R1	10	3.97	4.5		7			•		•									
		1204M0E-R2	12	4.76	4.4		7			•		•									
		1606M0E-R3	16	6.35	5.5		7			•		•									
		2006M0E-R4	20	6.35	6.5		7			•		•									

INSERT FOR STEEL

SEMI FINISHING

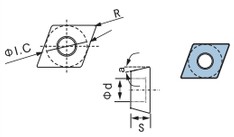
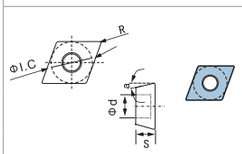
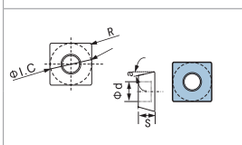
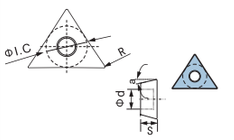
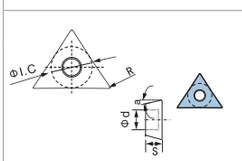
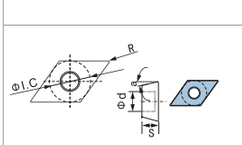
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CPMH	090304L/R-N	9.525	3.18	4.4	0.4	11														
		090304L/R-N	9.525	3.18	4.4	0.8	11														
	DCGT	070201L/R-N	6.35	2.38	2.8	0.	7														•
		070202L/R-N	6.35	2.38	2.8	0.2	7														•
		11T301L/R-N	9.525	3.97	4.4	0.	7														•
		11T302L/R-N	9.525	3.97	4.4	0.2	7														•
		11T304L/R-N	9.525	3.97	4.4	0.4	7												•		•
	TPGH	110302L/R-N	6.35	3.18	3.4	0.2	11												•		•
		110304L/R-N	6.35	3.18	3.4	0.4	11														
		110308L/R-N	6.35	3.18	3.4	0.8	11														
		160304L/R-N	9.525	3.18	4.4	0.4	11														
		160308L/R-N	9.525	3.18	4.4	0.8	11														
	VBGT	110301L/R-N	6.35	3.18	2.8	0.	5														
		110302L/R-N	6.35	3.18	2.8	0.2	5														
		110304L/R-N	6.35	3.18	2.8	0.4	5												•		
		110308L/R-N	6.35	3.18	2.8	0.8	5												•		
		160402L/R-N	9.525	4.76	4.4	0.2	5												•		
		160404L/R-N	9.525	4.76	4.4	0.4	5												•		
		160408L/R-N	9.525	4.76	4.4	0.8	5												•		
	WPGT	060304L/R-N	9.525	4.76	4.4	0.4	11														
		060308L/R-N	9.525	4.76	4.4	0.8	11														

INSERT FOR STEEL

SEMI FINISHING

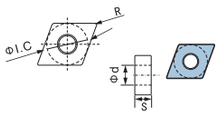
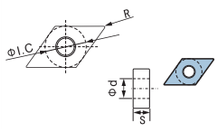
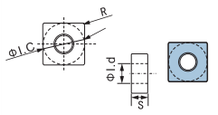
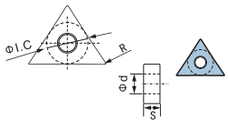
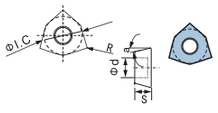
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCET	060201L/R-E	6.35	2.38	2.8	0.	7														
		060202L/R-E	6.35	2.38	2.8	0.2	7														
		060204L/R-E	6.35	2.38	2.8	0.4	7														
		09T301L/R-E	9.525	3.97	4.4	0.1	7														
		09T302L/R-E	9.525	3.97	4.4	0.2	7														
		09T304L/R-E	9.525	3.97	4.4	0.4	7														
	CCGT	060201L/R-E	6.35	2.38	2.8	0.	7			•								•		•	
		060202L/R-E	6.35	2.38	2.8	0.2	7			•								•		•	
		060204L/R-E	6.35	2.38	2.8	0.4	7			•								•		•	
		09T301L/R-E	9.525	3.97	4.4	0.	7			•								•		•	
		09T302L/R-E	9.525	3.97	4.4	0.2	7			•								•		•	
		09T304L/R-E	9.525	3.97	4.4	0.4	7			•								•		•	
	SPGT	090304L/R-E	9.525	3.18	4.4	0.4	11														
		090308L/R-E	9.525	3.18	4.4	0.8	11														
		120304L/R-E	12.7	3.18	5.5	0.4	11														
		120308L/R-E	12.7	3.18	5.5	0.8	11														
	TPET	110302L/R-E	6.35	3.18	2.8	0.2	11														
	TCGT	110302L/R-E	6.35	3.18	2.8	0.2	7			•								•		•	
	DCET	070202L/R-E	6.35	2.38	2.8	0.2	7														
		070204L/R-E	6.35	2.38	2.8	0.4	7														
		11T302L/R-E	9.525	3.97	4.4	0.2	7														
		11T302L/R-E	9.525	3.97	4.4	0.4	7														

INSERT FOR STEEL

SEMI FINISHING

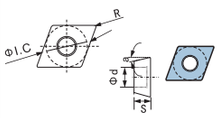
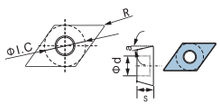
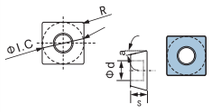
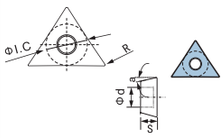
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120408-RA	12.7	4.76	5.16	0.8	•	•					•							
		120412-RA	12.7	4.76	5.16	1.2	•	•					•							
		120416-RA	12.7	4.76	5.16	1.6	•	•					•							
		160608-RA	15.875	6.35	6.35	0.8	•	•					•							
		160612-RA	15.875	6.35	6.35	1.2	•	•					•							
		160616-RA	15.875	6.35	6.35	1.6	•	•					•							
		190612-RA	19.05	6.35	7.93	1.2	•	•					•							
	DNMG	150408-RA	12.7	4.76	5.16	0.8	•	•					•							
		150412-RA	12.7	4.76	5.16	1.2	•	•					•							
		150416-RA	12.7	4.76	5.16	1.6	•	•					•							
		150608-RA	12.7	6.35	5.16	0.8	•	•					•							
		150612-RA	12.7	6.35	5.16	1.2	•	•					•							
		150616-RA	12.7	6.35	5.16	1.6	•	•					•							
	SNMG	120408-RA	12.7	4.46	5.16	0.8	•	•					•							
		120412-RA	12.7	4.76	5.16	1.2	•	•					•							
		120416-RA	12.7	4.76	5.16	1.6	•	•					•							
		150608-RA	15.875	6.35	6.35	0.8	•	•					•							
		150612-RA	15.875	6.35	6.35	1.2	•	•					•							
		150616-RA	15.875	6.35	6.35	1.6	•	•					•							
		190608-RA	19.05	6.35	7.93	0.8	•	•					•							
		190612-RA	19.05	6.35	7.93	1.2	•	•					•							
		190616-RA	19.05	6.35	7.93	1.6	•	•					•							
	TNMG	160408-RA	9.525	4.76	3.81	0.8	•	•					•							
		160412-RA	9.525	4.76	3.81	1.2	•	•					•							
		220408-RA	12.7	4.76	5.16	0.8	•	•					•							
		220412-RA	12.7	4.76	5.16	1.2	•	•					•							
		220416-RA	12.7	4.76	5.16	1.6	•	•					•							
	WNMG	06040-8RA	9.525	4.76	3.81	0.8	•	•					•							
		060412-RA	9.525	4.76	3.81	1.2	•	•					•							
		08040-8RA	12.7	4.76	5.16	0.8	•	•					•							
		080412-RA	12.7	4.76	5.16	1.2	•	•					•							
		080416-RA	12.7	4.76	5.16	1.6	•	•					•							

INSERT FOR STEEL AND CAST IRON

ROUGH MACHINING

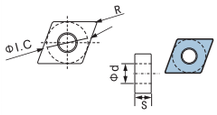
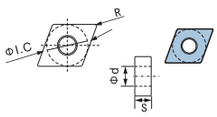
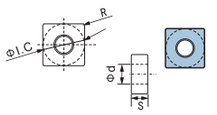
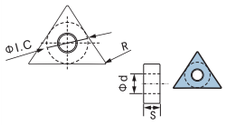
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060208-RA	6.35	2.38	2.8	0.8	7	•	•					•							
		09T308-RA	9.525	3.97	4.4	0.8	7	•	•					•							
		09T312-RA	9.525	3.97	4.4	1.2	7	•	•					•							
	DCMT	11T308-RA	9.525	3.97	4.4	0.8	7	•	•					•							
		11T312-RA	9.525	3.97	4.4	1.2	7	•	•					•							
	SCMT	09T308-RA	9.525	3.97	4.4	0.8	7	•	•					•							
		120408-RA	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-RA	12.7	4.76	5.5	1.2	7	•	•					•							
	TCMT	110308-RA	6.35	3.18	2.8	0.8	7	•	•					•							
		110312-RA	6.35	3.18	2.8	1.2	7	•	•					•							
		16T308-RA	9.525	3.97	4.4	0.8	7	•	•					•							
		16T312-RA	9.525	3.97	4.4	1.2	7	•	•					•							

INSERT FOR STAINLESS STEEL

FINISHING

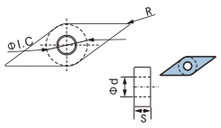
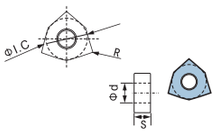
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	090304-SJ	9.525	3.18	3.81	0.4	•	•					•							
		090304-SJ	9.525	3.18	3.81	0.8	•	•					•							
		120404-SJ	12.7	4.76	5.16	0.4	•	•					•							
		120408-SJ	12.7	4.76	5.16	0.8	•	•					•							
		120412-SJ	12.7	4.76	5.16	1.2	•	•					•							
	DNMG	110404-SJ	9.525	4.76	3.81	0.4	•	•					•							
		110408-SJ	9.525	4.76	3.81	0.8	•	•					•							
		15040-4SJ	12.7	4.76	5.16	0.4	•	•					•							
		150408-SJ	12.7	4.76	5.16	0.8	•	•					•							
		150412-SJ	12.7	4.76	5.16	1.2	•	•					•							
		15060-4SJ	12.7	6.35	5.16	0.4	•	•					•							
		150608-SJ	12.7	6.35	5.16	0.8	•	•					•							
		150612-SJ	12.7	6.35	5.16	1.2	•	•					•							
	SNMG	090304-SJ	9.525	3.18	3.81	0.4	•	•					•							
		090308-SJ	9.525	3.18	3.81	0.8	•	•					•							
		090312-SJ	9.525	3.18	3.81	1.2	•	•					•							
		120404-SJ	12.7	4.76	5.16	0.4	•	•					•							
		120408-SJ	12.7	4.76	5.16	0.8	•	•					•							
		120412-SJ	12.7	4.76	5.16	1.2	•	•					•							
		120416-SJ	12.7	4.76	5.16	1.6	•	•					•							
		15060-8SJ	15.875	6.35	6.35	0.8	•	•					•							
		150612-SJ	15.875	6.35	6.35	1.2	•	•					•							
	TNMG	110302-SJ	6.35	3.18	2.4	0.2	•	•					•							
		110304-SJ	6.35	3.18	2.4	0.4	•	•					•							
		110308-SJ	6.35	3.18	2.4	0.8	•	•					•							
		110312-SJ	9.525	4.76	3.81	1.2	•	•					•							
		160404-SJ	9.525	4.76	3.81	0.4	•	•					•							
		160408-SJ	9.525	4.76	3.81	0.8	•	•					•							
		160412-SJ	9.525	4.76	3.81	1.2	•	•					•							
		160416-SJ	9.525	4.76	3.81	1.6	•	•					•							
		220404-SJ	12.7	4.76	5.16	0.4	•	•					•							
		220408-SJ	12.7	4.76	5.16	0.8	•	•					•							
		220412-SJ	12.7	4.76	5.16	1.2	•	•					•							

INSERT FOR STAINLESS STEEL

FINISHING

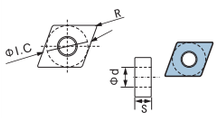
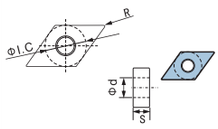
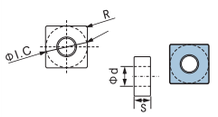
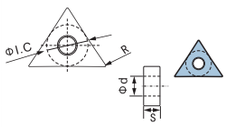
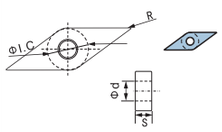
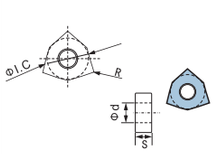
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	VNMG	160404-SJ 160408 -SJ	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
	WNMG	06040-4SJ 060408-SJ	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
		080404-SJ 080408-SJ	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8	• •	• •					• •							

INSERT FOR STAINLESS STEEL

FINISHING

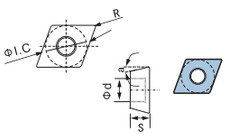
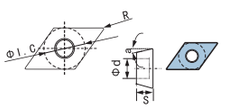
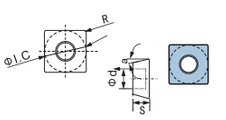
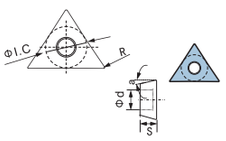
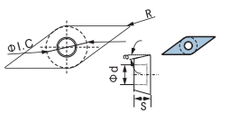
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			Φl.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120404-LH 120408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8	• •	• •					• •							
		120412-LH	12.7	4.76	5.16	1. 2	•	•					•							
	DNMG	150404-LH 150408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8	• •	• •					• •							
		150604-LH 150608-LH	12.7 12.7	6.35 6.35	5.16 5.16	0.4 0.8	• •	• •					• •							
	SNMG	120404-LH 120408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8	• •	• •					• •							
		120412-LH	12.7	4.76	5.16	1. 2	•	•					•							
	TNMG	160404-LH 160408-LH	9. 525 9. 525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
		160412-LH 220408-LH	9. 525 12.7	4.76 4.76	3.81 5.16	1.2 0.8	• •	• •					• •							
		220412-LH	12.7	4.76	5.16	1.2	•	•					•							
	VNMG VNGG	160404-LH	9. 525	4.76	3.81	0.4	•	•					•							
		160408-LH 160401-LH	9. 525 9. 525	4.76 4.76	3.81 3.81	0.8 0.	• •	• •					• •							
		160402-LH 160404-LH	9. 525 9. 525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
	WNMG WNGG	060404-LH 060408-LH	9. 525 9. 525	4.76 4.76	3.81 3.81	0.4 0.8	• •	• •					• •							
		080404-LH 080408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8	• •	• •					• •							
		080412-LH 080404-LH	12.7 12.7	4.76 4.76	5.16 5.16	1. 2 0.4	• •	• •					• •							
		080408-LH	12.7	4.76	5.16	0.8	•	•					•							

INSERT FOR STAINLESS STEEL

FINISHING

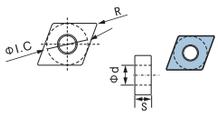
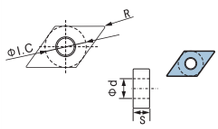
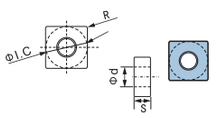
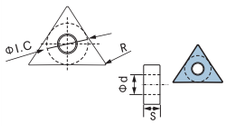
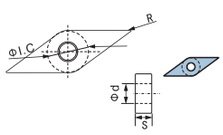
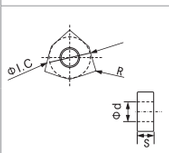
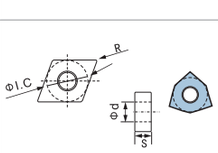
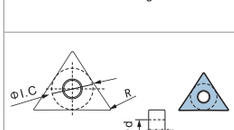
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060202-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		060204-FW	6.35	2.38	2.8	0.4	7	•	•					•							
		09T302-FW	9.525	3.97	4.4	0.2	7	•	•					•							
		09T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		09T308-FW	9.525	3.97	4.4	0.8	7	•	•					•							
		120404-FW	12.7	4.76	5.5	0.4	7	•	•					•							
	DCMT	070202-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		07020-4FW	6.35	2.38	2.8	0.4	7	•	•					•							
		11 T302-FW	9.525	3.97	4.4	0.2	7	•	•					•							
		11T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		11T308-FW	9.525	3.97	4.4	0.8	7	•	•					•							
	SCMT	09T304-FW	9.525	3.18	4.4	0.4	7	•	•					•							
		09T308-FW	9.525	3.18	4.4	0.8	7	•	•					•							
		120404-FW	12.7	4.76	5.5	0.4	7	•	•					•							
		120408-FW	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-FW	12.7	4.76	5.5	1.2	7	•	•					•							
	TCMT	090202-FW	5.56	2.38	2.5	0.2	7	•	•					•							
		090204-FW	5.56	2.38	2.5	0.4	7	•	•					•							
		110302-FW	6.35	3.18	2.8	0.2	7	•	•					•							
		110304-FW	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-FW	6.35	3.18	2.8	0.8	7	•	•					•							
		16 T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
	VBMT	110302-FW	6.35	3.18	2.8	0.2	5	•	•					•							
		110304-FW	6.35	3.18	2.8	0.4	5	•	•					•							
		110308-FW	6.35	3.18	2.8	0.8	5	•	•					•							
		160402-FW	9.525	4.76	4.4	0.2	5	•	•					•							
		160404-FW	9.525	4.76	4.4	0.2	5	•	•					•							
		160408-FW	9.525	4.76	4.4	0.2	5	•	•					•							

INSERT FOR STAINLESS STEEL

FINISHING

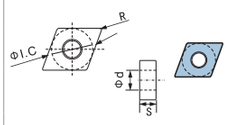
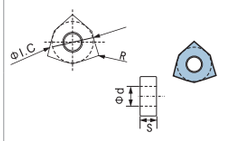
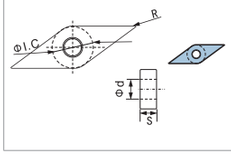
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120408-SN 120412-SN	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
		160608-SN 160612-SN	15.875 15.875	6.35 6.35	6.35 6.35	0.8 1.2	• •	• •					• •							
		190608-SN 190612-SN	19.05 19.05	6.35 6.35	7.93 7.93	0.8 1.2	• •	• •					• •							
	DNMG	110408-SN 110412-SN	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							
		150408-SN 150412-SN	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
		150608-SN 150612-SN	12.7 12.7	6.35 6.35	5.16 5.16	0.8 1.2	• •	• •					• •							
	SNMG	120408-SN 120412-SN	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
		150612-SN	15.875	6.35	6.35	1.2	•	•					•							
	TNMG	160408-SN 160412-SN	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							
		220408-SN 220412-SN	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
	VNMG	160408-SN 160412-SN	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							
	WNMG	060408-SN 060412-SN	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							
		080408-SN 080412-SN	12.7 12.7	4.76 4.76	5.16 5.16	0.8 0.2	• •	• •					• •							
	CNMG	120408-HM 120412-HM	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
		160608-HM 160612-HM	15.875 15.875	6.35 6.35	6.35 6.35	0.8 1.2	• •	• •					• •							
		190608-HM 190612-HM	19.05 19.05	6.35 6.35	7.93 7.93	0.8 1.2	• •	• •					• •							
	TNMG	160408-HM 160412-HM	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							
		220408-HM 220412-HM	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							

INSERT FOR STAINLESS STEEL

FINISHING

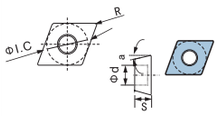
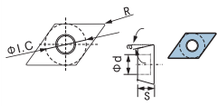
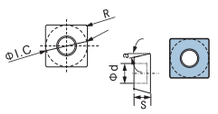
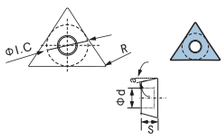
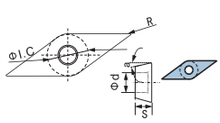
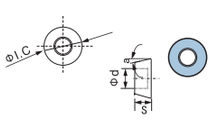
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120408-SA 120412-SA	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2	• •	• •					• •							
		160608-SA 160612-SA	15.875 15.875	6.35 6.35	6.35 6.35	0.8 1.2	• •	• •					• •							
		190608-SA 190612-SA	19.05 19.05	6.35 6.35	7.93 7.93	0.8 1. 2	• •	• •					• •							
	WNMA	060408-SA 060412-SA	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1. 2														
		080408-SA 080412-SA	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1. 2														
	VNMG	160408-SA 160412-SA	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1.2	• •	• •					• •							

INSERT FOR CAST IRON

FINISHING

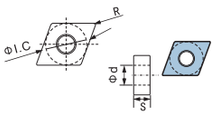
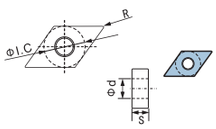
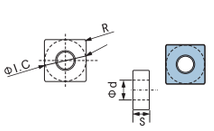
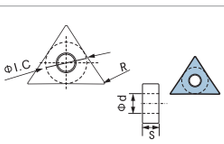
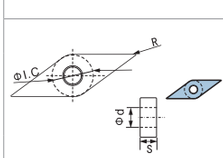
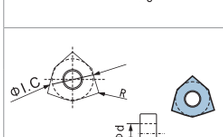
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060204-MD	6.35	2.38	2.8	0.4	7	•	•					•							
		060208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		09T304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		09T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		120404-MD	12.7	4.76	4.4	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	1.2	7	•	•					•							
	DCMT	070204-MD	6.35	2.38	5.5	0.4	7	•	•					•							
		070208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		11T304-MD	9.525	3.97	2.8	0.4	7	•	•					•							
		11T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		11T312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
	SCMT	09T304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		09T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		09T312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
		120404-MD	12.7	4.76	5.5	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	1.2	7	•	•					•							
	TCMT	090204-MD	5.56	2.38	2.5	0.4	7	•	•					•							
		090208-MD	5.56	2.38	2.5	0.8	7	•	•					•							
		110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
		110312-MD	6.35	3.18	2.8	1.2	7	•	•					•							
		16T304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		16T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		16T312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
	VCMT VBMT	110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
		160404-MD	9.525	4.76	4.4	0.4	5	•	•					•							
		160408-MD	9.525	4.76	4.4	0.8	5	•	•					•							
	RCMT	0803M0E-R1	8	2.38	3.3		7	•	•					•							
		10T3M0E-R1	10	3.97	4.5		7	•	•					•							
		1204M0E -R2	12	4.76	4.4		7	•	•					•							
		1606M0E-R3	16	6.35	5.5		7	•	•					•							
		2006M0E-R4	20	6.35	6.5		7	•	•					•							

INSERT FOR CAST IRON

FINISHING

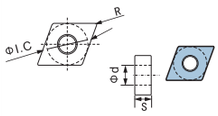
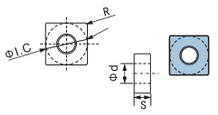
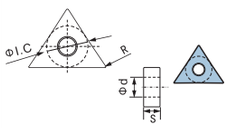
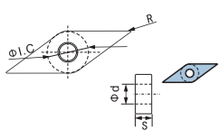
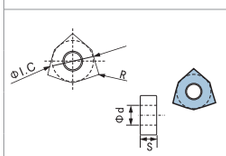
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120404-U	12.7	4.76	5.16	0.4	•	•					•							
		120408-U	12.7	4.76	5.16	0.8	•	•					•							
		120412-U	12.7	4.76	5.16	1.2	•	•					•							
		160604-U	15.875	6.35	6.35	0.4	•	•					•							
		160608-U	15.875	6.35	6.35	0.8	•	•					•							
		160612-U	15.875	6.35	6.35	1.2	•	•					•							
	DNMG	11T304-U	9.525	3.97	3.81	0.4	•	•					•							
		11T308-U	9.525	3.97	3.81	0.8	•	•					•							
		150404-U	12.7	4.76	5.16	0.4	•	•					•							
		150408-U	12.7	4.76	5.16	0.8	•	•					•							
		150604-U	12.7	6.35	5.16	0.4	•	•					•							
		150608-U	12.7	6.35	5.16	0.8	•	•					•							
	SNMG	090304-U	9.525	3.18	3.81	0.4	•	•					•							
		090308-U	9.525	3.18	3.81	0.8	•	•					•							
		120404-U	12.7	4.76	5.16	0.4	•	•					•							
		120408-U	12.7	4.76	5.16	0.8	•	•					•							
		120412-U	12.7	4.76	5.16	1.2	•	•					•							
		150608-U	15.875	6.35	6.35	0.8	•	•					•							
		150612-U	15.875	6.35	6.35	1.2	•	•					•							
	TNMG	16T304-U	9.525	3.97	3.81	0.4														
		16T308-U	9.525	3.97	3.81	0.8														
		16T312-U	9.525	3.97	3.81	1.2														
	VNMG	160404-U	9.525	4.76	3.81	0.4	•	•					•							
		160408-U	9.525	4.76	3.81	0.8	•	•					•							
		220404-U	12.7	4.76	5.16	0.4	•	•					•							
		220408-U	12.7	4.76	5.16	0.8	•	•					•							
		220412-U	12.7	4.76	5.16	1.2	•	•					•							
	WNMG	080404-U	12.7	4.76	5.16	0.4	•	•					•							
		080408-U	12.7	4.76	5.16	0.8	•	•					•							
		080412-U	12.7	4.76	5.16	1.2	•	•					•							

INSERT FOR CAST IRON

FINISHING

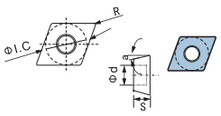
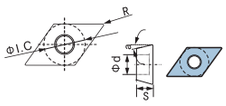
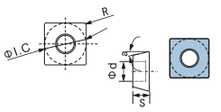
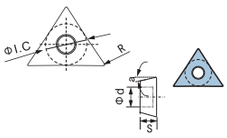
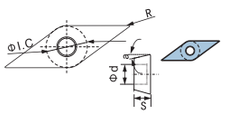
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	DNMG	110404-CX 110408-CX	9.525 9.525	3.97 3.97	3.81 3.81	0.4 0.8														
		150404-CX 150408-CX	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8							• •							
	SNMG	090304-CX 090308-CX	9.525 9.525	3.18 3.18	3.81 3.81	0.4 0.8							• •							
		120404-CX 120408-CX	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8							• •							
		120412-CX 150608-CX	12.7 15.875	4.76 6.35	5.16 6.35	1. 2 0.8							•							
		150912-CX	15.875	6.35	6.35	1. 2														
	TNMG	160404-CX	9.525	4.76	3.81	0.4														
		160408-CX 160412-CX	9.525 9.525	4.76 4.76	3.81 3.81	0.8 1. 2														
	WNMG	060404-CX	9.525	4.76	5.16	0.4														
		060408-CX 080404-CX	9.525 12.7	4.76 4.76	5.16 5.16	0.8 0.4														
		080408-CX 080412-CX	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1. 2						•								
	CNMG	120404-CX 120408-CX	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8						• •								
		120412-CX 160604-CX	12.7 15.875	4.76 6.35	5.16 6.35	1. 2 0.4						• •								
		160608-CX 160612-CX	15.875 15.875	6.35 6.35	6.35 6.35	0.8 1. 2						• •								

INSERT FOR CAST IRON

FINISHING

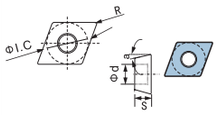
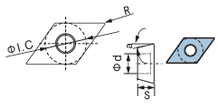
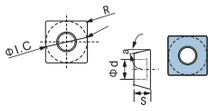
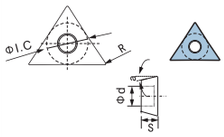
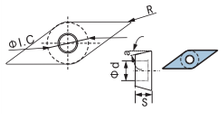
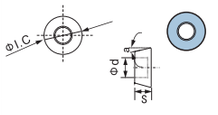
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060202-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		060204-FW	6.35	2.38	2.8	0.4	7	•	•					•							
		091302-FW	9.525	3.97	4.4	0.2	7	•	•					•							
		091304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		091308-FW	9.525	3.97	4.4	0.8	7	•	•					•							
		120404-FW	12.7	4.76	5.5	0.4	7	•	•					•							
	DCMT	070202-FW	6.35	2.38	2.8	0.2	7	•	•					•							
		070204-FW	6.35	2.38	2.8	0.4	7	•	•					•							
		111302-FW	9.525	3.97	4.4	0.2	7	•	•					•							
		11T304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
		111308-FW	9.525	3.97	4.4	0.8	7	•	•					•							
	SCMT	091304-FW	9.525	3.18	4.4	0.4	7	•	•					•							
		091308-FW	9.525	3.18	4.4	0.8	7	•	•					•							
	TCMT	110302-FW	6.35	3.18	2.8	0.2	7	•	•					•							
		110304-FW	6.35	3.18	2.8	0.4	7	•	•					•							
		161304-FW	9.525	3.97	4.4	0.4	7	•	•					•							
	VBMT	110302-FW	6.35	3.18	2.8	0.2	5														
		110304-FW	6.35	3.18	2.8	0.4	5														
		110308-FW	6.35	3.18	2.8	0.8	5														
		160402-FW	9.525	4.76	4.4	0.2	5														
		160404-FW	9.525	4.76	4.4	0.2	5														
		160408-FW	9.525	4.76	4.4	0.2	5														

INSERT FOR CAST IRON

SEMI FINISHING

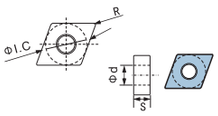
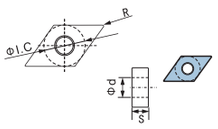
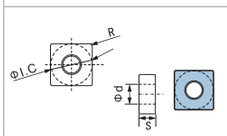
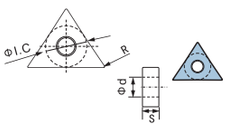
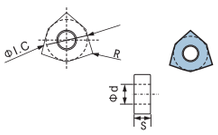
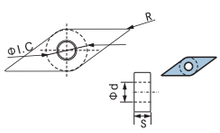
SHAPE OF POSITIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCMT	060204-MD	6.35	2.38	2.8	0.4	7	•	•					•							
		060208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		09T304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		09T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		120404-MD	12.7	4.76	4.4	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	1.2	7	•	•					•							
	DCMT	070204-MD	6.35	2.38	5.5	0.4	7	•	•					•							
		070208-MD	6.35	2.38	2.8	0.8	7	•	•					•							
		11 T304-MD	9.525	3.97	2.8	0.4	7	•	•					•							
		11 T308-MD	9.525	3.97	4.4	0.8	7														
		11T312-MD	9.525	3.97	4.4	1.2	7														
	SCMT	09T304-MD	9.525	3.97	4.4	0.4	7	•	•					•							
		09T308-MD	9.525	3.97	4.4	0.8	7	•	•					•							
		09T312-MD	9.525	3.97	4.4	1.2	7	•	•					•							
		120404-MD	12.7	4.76	5.5	0.4	7	•	•					•							
		120408-MD	12.7	4.76	5.5	0.8	7	•	•					•							
		120412-MD	12.7	4.76	5.5	1.2	7	•	•					•							
	TCMT	090204-MD	5.56	2.38	2.5	0.4	7														
		090208-MD	5.56	2.38	2.5	0.8	7														
		110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
		110312-MD	6.35	3.18	2.8	1.2	7														
		16T304-MD	9.525	3.97	4.4	0.4	7														
		16 T308-MD	9.525	3.97	4.4	0.8	7														
		16T312-MD	9.525	3.97	4.4	1.2	7														
	VCMT VBMT	110304-MD	6.35	3.18	2.8	0.4	7	•	•					•							
		110308-MD	6.35	3.18	2.8	0.8	7	•	•					•							
		160404-MD	9.525	4.76	4.4	0.4	5	•	•					•							
		160408-MD	9.525	4.76	4.4	0.8	5	•	•					•							
	RCMT	0803M0E-R1	8	2.38	3.3		7			•											
		10T3M0E-R1	10	3.97	4.5		7			•											
		1204M0E-R2	12	4.76	4.4		7			•											
		1606M0E-R3	16	6.35	5.5		7			•											
		2006M0E-R4	20	6.35	6.5		7			•											

INSERT FOR CAST IRON

SEMI FINISHING

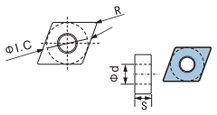
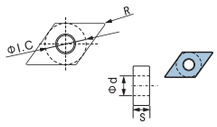
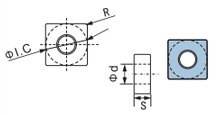
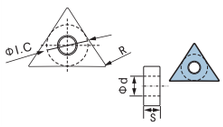
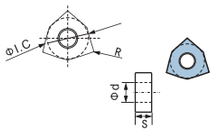
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120404-CQ 120408-CQ	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8													
		120412-CQ 120416-CQ	12.7 12.7	4.76 4.76	5.16 5.16	1.2 6							• •						
		160608-CQ 160612-CQ	15.875 15.875	6.35 6.35	6.35 6.35	0.8 1.2							• •						
		160616-CQ	15.875	6.35	6.35	6							•						
	DNMG	110408-CQ	9. 525	4.76	3.81	0.8							•						
		110412-CQ 150408-CQ	9. 525 12.7	4.76 4.76	3.81 5.16	2 0.8							•						
		150412-CQ 150608-CQ	12.7 12.7	4.76 6.35	5.16 5.16	1.2 0.8													
		150612-CQ	12.7	6.35	5.16	1.2													
	SNMG	120408-CQ	12.7	4.76	5.16	0.8													
		120412-CQ 120416-CQ	12.7 12.7	4.76 4.76	5.16 5.16	2 1.6													
		150612-CQ 150616-CQ	15.875 15.875	6.35 6.35	6.35 6.35	2 1.6													
	TNMG	160408-CQ 160412-CQ	9. 525 9. 525	4.76 4.76	3.81 3.81	0.8 2													
		220408-CQ 220412-CQ	12.7 12.7	4.76 4.76	5.16 5.16	0.8 12													
	WNMG	060408-CQ 060412-CQ	9. 525 9. 525	4.76 4.76	3.81 3.81	0.8 1.2													
		080404-CQ 080408-CQ	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8													
		080412-CQ 080416-CQ	12.7 12.7	4.76 4.76	5.16 5.16	1.2 6													
	VNMG	160404-CQ 160408-CQ	9. 525 9. 525	4.76 4.76	3.81 3.81	0.4 0.8													
		160412-CQ	9. 525	4.76	3.81	1.2													

INSERT FOR CAST IRON

ROUGH MACHINING

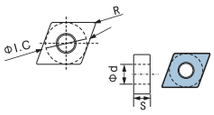
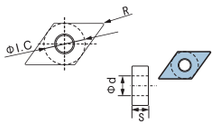
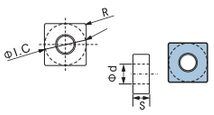
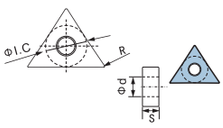
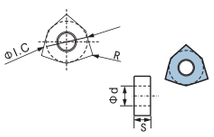
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120408-RA	12.7	4.76	5.16	0.8						•								
		120412-RA	12.7	4.76	5.16	1.2						•								
		120416-RA	12.7	4.76	5.16	1.6						•								
		160612-RA	15.875	6.35	6.35	1.2						•								
		160616-RA	15.875	6.35	6.35	1.6						•								
		190612-RA	19.05	6.35	7.93	2						•								
		190616-RA	19.05	6.35	7.93	1.6						•								
	DNMG	150408-RA	12.7	4.76	5.16	0.8						•								
		150412-RA	12.7	4.76	5.16	2						•								
		150608-RA	12.7	6.35	5.16	0.8						•								
		150612-RA	12.7	6.35	5.16	2						•								
		150616-RA	12.7	6.35	5.16	1.6						•								
	SNMG	120408-RA	12.7	4.76	5.16	0.8						•								
		120412-RA	12.7	4.76	5.16	2						•								
		120416-RA	12.7	4.76	5.16	1.6						•								
		150612-RA	15.875	6.35	6.35	2						•								
		150616-RA	15.875	6.35	6.35	1.6						•								
		190616-RA	19.05	6.35	7.93	1.6						•								
		250724-RA	25.4	7.94	9.12	2.4						•								
	TNMG	160408-RA	9.525	4.76	3.81	0.8						•								
		160412-RA	9.525	4.76	3.81	1.2						•								
		160416-RA	9.525	4.76	3.81	1.6						•								
		220408-RA	12.7	4.76	5.16	0.8						•								
		220412-RA	12.7	4.76	4.76	2						•								
		220416-RA	12.7	4.76	5.16	1.6						•								
	WNMG	060408-RA	9.525	4.76	3.81	0.8						•								
		060412-RA	9.525	4.76	3.81	2						•								
		080408-RA	12.7	4.76	5.16	0.8						•								
		080412-RA	12.7	4.76	5.16	12						•								

INSERT FOR CAST IRON

ROUGH MACHINING

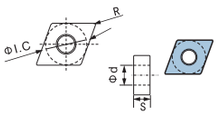
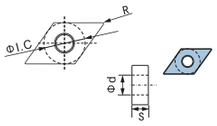
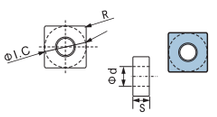
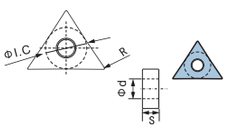
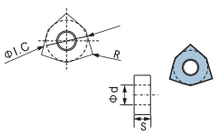
SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMG	120408-GH	12.7	4.76	5.16	0.8	•	•					•							
		120412-GH	12.7	4.76	5.16	1.2	•	•					•							
		120416-GH	12.7	4.76	5.16	1.6	•	•					•							
		160608-GH	15.875	6.35	6.35	0.8	•	•					•							
		160612-GH	15.875	6.35	6.35	1.2	•	•					•							
		190608-GH	19.05	6.35	7.93	0.8	•	•					•							
		190612-GH	19.05	6.35	7.93	1.2	•	•					•							
	DNMG	110408-GH	9.525	4.76	3.81	0.8	•	•					•							
		150408-GH	12.7	4.76	5.16	0.8	•	•					•							
		150608-GH	12.7	6.35	5.16	0.8	•	•					•							
	SNMG	120408-GH	12.7	4.76	5.16	0.8	•	•					•							
		120412-GH	12.7	4.76	5.16	1.2	•	•					•							
		150608-GH	15.875	6.35	6.35	0.8	•	•					•							
		150612-GH	15.875	6.35	6.35	1.2	•	•					•							
	TNMG	160408-GH	9.525	4.76	3.81	0.8	•	•					•							
		160412-GH	9.525	4.76	3.81	1.2	•	•					•							
		220408-GH	12.7	4.76	5.16	0.8	•	•					•							
		220412-GH	12.7	4.76	5.16	1.2	•	•					•							
	WNMG	060408-GH	9.525	4.76	3.81	0.8	•	•					•							
		060412-GH	9.525	4.76	3.81	1.2	•	•					•							
		080408-GH	12.7	4.76	5.16	0.8	•	•					•							
		080412-GH	12.7	4.76	5.16	1.2	•	•					•							
		080416-GH	12.7	4.76	5.16	1.6	•	•					•							

CAST IRON

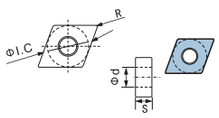
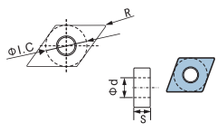
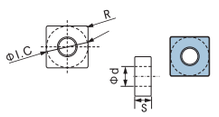
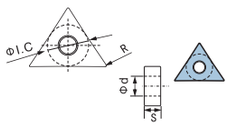
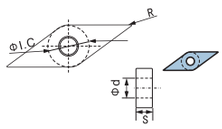
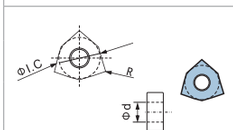
ROUGH MACHINING

SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNMA	120404	12.7	4.76	5.16	0.4						•								
		120408	12.7	4.76	5.16	0.8						•								
		120412	12.7	4.76	5.16	1.2						•								
		160604	15.875	6.35	6.35	0.4						•								
		160608	15.875	6.35	6.35	0.8						•								
		160612	15.875	6.35	6.35	1.2						•								
		160616	15.875	6.35	6.35	6						•								
	DNMA	110408	9.525	4.76	3.81	0.8						•								
		110412	9.525	4.76	3.81	1.2						•								
		150404	12.7	4.76	5.16	0.4						•								
		150408	12.7	4.76	5.16	0.8						•								
		150412	12.7	4.76	5.16	2						•								
		150604	12.7	6.35	5.16	0.4						•								
		150608	12.7	6.35	5.16	0.8						•								
		150612	12.7	6.35	5.16	2						•								
	SNMA	090304	9.525	3.18	3.81	0.4						•								
		090308	9.525	8.18	3.81	0.8						•								
		120404	12.7	4.76	5.16	0.4						•								
		120408	12.7	4.76	5.16	0.8						•								
		120412	12.7	4.76	5.16	2						•								
		150608	15.875	6.35	6.35	0.8						•								
		150612	15.875	6.35	6.35	1.2						•								
		190608	19.05	6.35	7.93	0.8						•								
		190612	19.05	6.35	7.93	1.2						•								
	TNMA	160408	9.525	4.76	3.81	0.8														
		160412	9.525	4.76	3.81	1.2														
		220404	12.7	4.76	5.16	0.4														
		220408	12.7	4.76	5.16	0.8														
		220412	12.7	4.76	5.16	1.2														
	WNMA	060404	9.525	4.76	3.81	0.4														
		060408	9.525	4.76	3.81	0.8														
		060412	9.525	4.76	3.81	1.2														
		080404	12.7	4.76	5.16	0.4														
		080408	12.7	4.76	5.16	0.8														
		080412	12.7	4.76	5.16	1.2														

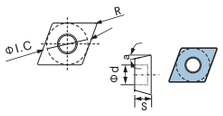
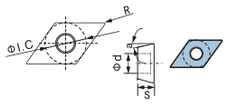
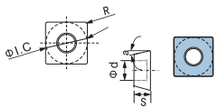
ALUMINUM

SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CNGG	120404-LH 120408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8						• •							
		120412-LH	12.7	4.76	5.16	12						• •							
	DNGG	150404-LH 150408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8						• •							
		150604-LH 150608-LH	12.7 12.7	6.35 6.35	5.16 5.16	0.4 0.8						• •							
	SNGG	120404-LH 120408-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.4 0.8						• •							
		120412-LH	12.7	4.76	5.16	12						• •							
	TNGG	160404-LH 160408-LH	9.525 9.525	4.76 4.76	3.81 3.81	0.4 0.8													
		160412-LH 220408-LH	9.525 12.7	4.76 4.76	3.81 5.16	1.2 0.8							• •						
		220412-LH	12.7	4.76	5.16	2							•						
	VNGG	160404-LH	9.525	4.76	3.81	0.4							•						
		160408-LH	9.525	4.76	3.81	0.8							• •						
													•						
	WNGG	060404-LH	9.525	4.76	3.81	0.4							•						
		060408-LH 080404-LH	9.525 12.7	4.76 4.76	3.81 5.16	0.8 0.4							• •						
		080408-LH 080412-LH	12.7 12.7	4.76 4.76	5.16 5.16	0.8 1.2													

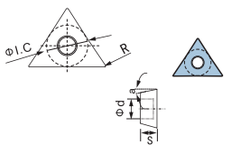
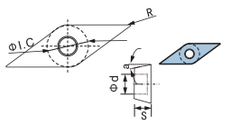
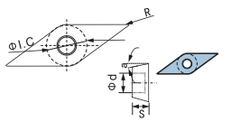
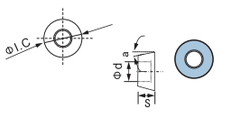
ALUMINUM

SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	CCGT	060202-LH	6.35	2.38	2.8	0.2	7					•							•		•
		060204-LH	6.35	2.38	2.8	0.4	7					•							•		•
		060208-LH	6.35	2.38	2.8	0.8	7					•							•		•
		09T302-LH	9.525	3.97	4.4	0.2	7					•							•		•
		09T304-LH	9.525	3.97	4.4	0.4	7					•							•		•
		09T308-LH	9.525	3.97	4.4	0.8	7					•							•		•
		120402-LH	12.7	4.76	5.5	0.2	7					•							•		•
		120404-LH	12.7	4.76	5.5	0.4	7					•							•		•
		120408-LH	12.7	4.76	5.5	0.8	7					•							•		•
	DCGT	070202-LH	6.35	2.38	2.8	0.2	7					•							•		•
		070204-LH	6.35	2.38	2.8	0.4	7					•							•		•
		070208-LH	6.35	2.38	2.8	0.8	7					•							•		•
		11T302-LH	9.525	3.97	4.4	0.2	7					•							•		•
		11T304-LH	9. 525	3.97	4.4	0.4	7					•							•		•
		11T308- LH	9. 525	3.97	4.4	0.8	7					•							•		•
		11T312-LH	9.525	3.97	4.4	1.2	7					•							•		•
	SCGT	09T302-LH	9.525	3.97	4.4	0.2	7					•							•		•
		09T304-LH	9.525	3.97	4.4	0.4	7					•							•		•
		09T308-LH	9.525	3.97	4.4	0.8	7					•							•		•
		120402-LH	12.7	4.76	5.5	0.2	7					•							•		•
		120404-LH	12.7	4.76	5.5	0.4	7					•							•		•
		120408-LH	12.7	4.76	5.5	0.8	7					•							•		•
		120412-LH	12.7	4.76	5.5	1.2	7					•							•		•
		120416-LH	12.7	4.76	5.5	1.6	7					•							•		•

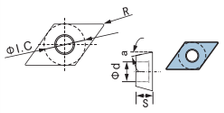
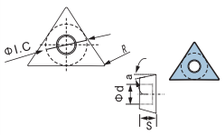
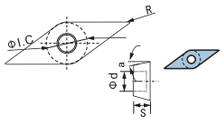
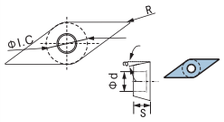
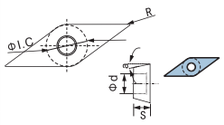
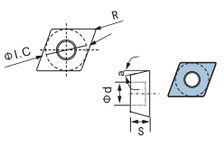
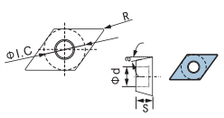
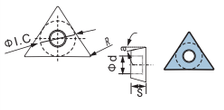
ALUMINUM

SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	TCGT	090202-LH 090204-LH	5.56 5.56	2.38 2.38	2.5 2.5	0.2 0.4	7 7														• •
		090208-LH 110202-LH	5.56 6.35	2.38 2.38	2.5 2.8	0.8 0.2	7 7														• •
		110204-LH 110208-LH	6.35 6.35	2.38 2.38	2.8 2.8	0.4 0.8	7 7														• •
		16T302-LH 16T304-LH	9.525 9.525	3.97 3.97	4.4 4.4	0.2 0.4	7 7														• •
		16T308-LH 16T312-LH	9.525 9.525	3.97 3.97	4.4 4.4	0.8 1.2	7 7														• •
	VCGT	110302-LH 110304-LH	6.35 6.35	3.18 3.18	2.8 2.8	0.2 0.4	7 7														• •
		110308-LH 130302-LH	6.35 7.86	3.18 3.18	2.8 3.4	0.8 0.2	7 7														• •
		130304-LH 160402-LH	7.86 9.525	3.18 4.76	3.4 4.4	0.4 0.2	7 7														• •
		160404-LH 160408-LH	9.525 9.525	4.76 4.76	4.4 4.4	0.4 0.8	7 7														• •
		160412-LH 220520-LHC	9.525 12.7	4.76 5.96	4.4 5.5	1.2 2	7 7														•
		220530-LHC	12.7	5.96	5.5	3	7														
	VBGT	110302-LH	6.35	3.18	2.8	0.2	5														
		110304-LH 110308-LH	6.35 6.35	3.18 3.18	2.8 2.8	0.4 0.8	5 5														
		160402-LH 160404-LH	9.525 9.525	4.76 4.76	4.4 4.4	0.2 0.4	5 5														
		160408-LH 160412-LH	9.525 9.525	4.76 4.76	4.4 4.4	0.8 1. 2	5 5														
		220516-LH 220525-LH	12.7 12.7	5.96 5.96	5.5 5.5	1.6 2.5	5 5														
		220530-LH	12.7	5.96	5.5	3	5														
	RCGT	0602M0-LH	6	2.38	2.5		7														
		0803M0-LH 1003M0-LH	8 10	3.18 3.18	3.4 4.4		7 7														• •
		10T3M0-LH 1204M0-LH	10 12	3.97 4.76	4.4 5.5		7 7														• •

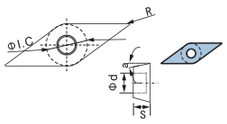
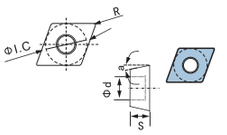
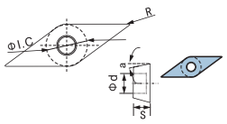
ALUMINUM

SHAPE OF NEGATIVE RAKE INSERTS

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	DCGT	11T304-LH2	9.525	3.97	4.4	0.4	7														•
		11T308-LH2	9.525	3.97	4.4	0.8	7														•
	TCGT	16T304-LH2	9.525	3.97	4.4	0.4	7														•
		16T308-LH2	9.525	3.97	4.4	0.8	7														•
	VCGT	160404-LH2	9.525	4.76	4.4	0.4	7														•
		160408-LH2	9.525	4.76	4.4	0.8	7														•
	VPGT	220530-LH2	12.7	5.96	5.5	3	11														
	VPET	1103003L-E	6.35	3.18	2.8	0.03	11														
		110301L-E	6.35	3.18	2.8	0.	11														
		110302L-E	6.35	3.18	2.8	0.2	11														
		1103003R-E	6.35	3.18	2.8	0.03	11														
		110301R-E	6.35	3.18	2.8	0.	11														
		110302R-E	6.35	3.18	2.8	0.2	11														
	CCGT	060202-LH3	6.35	2.38	2.8	0.2	7														•
		060204-LH3	6.35	2.38	2.8	0.4	7														•
		09T302-LH3	9.525	3.97	4.4	0.2	7														•
		09T304-LH3	9.525	3.97	4.4	0.4	7														•
		09T308-LH3	9.525	3.97	4.4	0.8	7														•
		120404-LH3	12.7	4.76	5.5	0.4	7														•
	DCGT	070202-LH3	6.35	2.38	2.8	0.2	7														•
		070204-LH3	6.35	2.38	2.8	0.4	7														•
		11T302-LH3	9.525	3.97	4.4	0.2	7														•
		11T304-LH3	9.525	3.97	4.4	0.4	7														•
		11T308-LH3	9.525	3.97	4.4	0.8	7														•
	TCGT	110204-LH3	6.35	2.38	2.8	0.4	7														•
		16T304-LH3	9.525	3.97	4.4	0.4	7														

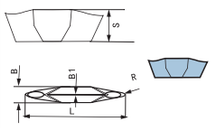
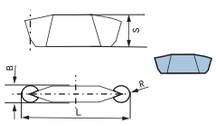
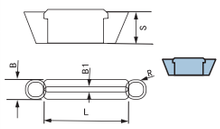
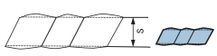
ALUMINUM

SHAPE OF NEGATIVE RAKE INSERTS

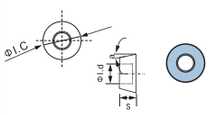
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	VCGT	110302-LH3	6.35	3.18	2.8	0.2	7														•
		110304-LH3	6.35	3.18	2.8	0.4	7														•
		160402-LH3	9.525	4.76	4.4	0.2	7														•
		160404-LH3	9.525	4.76	4.4	0.4	7														•
		160408-LH3	9.525	4.76	4.4	0.8	7														•
	DCGT	111302-LA	9.525	3.97	4.4	0.2	7														•
		111304-LA	9.525	3.97	4.4	0.4	7														•
		111308-LA	9.525	3.97	4.4	0.8	7														•
	VCGT	110302-LA	6.35	3.18	2.8	0.2	7														•
		110304-LA	6.35	3.18	2.8	0.4	7														•
		160402-LA	9.525	4.76	4.4	0.2	7														•
		160404-LA	9.525	4.76	4.4	0.4	7														•
		160408- LA	9. 525	4.76	4.4	0.8	7														•

ALUMINUM

GROOVING & CUT-OFF INSERTS

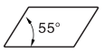
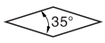
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			L	B	B1	S	R	GS4300	GS4220	AG2300	AG2310	AG2320	GS2300	GS2310	GS2301	GS2311	GS2320	GS2321	GS3320	GS3310	GS3300
	GIPA7YZ-35V -1.2-LH		30	7. 2	6	8. 2	1 2														
	GDMA840-LH		30	8	5. 6	8. 2	4														
	MRGN	400-A-LH 500-A-LH 600-A-LH 800-A-LH	21 26 26 31	4 5 6 8	3.3 4. 5 6	4. 8 5. 8 5. 8 6.5	2. 2. 5 3 4														
	GIP600E-3. 00-LH		18	6	4. 8	6.5	3														

TURNING INSERTS FOR BEARING

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			ΦI.C	S	Φd	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	DP120S	DP120x	DP121x	GS1221S	GS2330	DP122S	GL2221	DL22S	GL1099
	RDMT	0802M0-V1 10T3M0-V1	8 10	2.38 3.97	3.3 4.5	15 15			• •	• •											
		1204M0-V2 1203M0-V2	12 12	3.18 4.76	4.4 4.4	15 11			• •	• •											
	RPMT	16 T4M0-V3	16	4.96	5.5	11			•	•											

CODE CLASSIFICATION FOR INDEXABLE MILLING INSERTS

Inserts Shape/Code

 A	 B	 C
 D	 E	 H
 K	 L	 M
 O	 P	 R
 S	 T	 T
 V	 W	Others

Inserts Shape

Metric

Code	With/ without hole	With/without chip breaker	Section plane of insert	Code	With/without hole	With/without chip breaker	Section plane of insert
B	With	Without		N	Without	Without	
H	With	Single-side		R	Without	Single-side	
C	With	Without		F	Without	Double-side	
J	With	Double-side		A	With	Without	
W	With	Without		M	With	Single-side	
T	With	Single-side		G	With	Double-side	
Q	With	Without		X			Special
U	With	Double-side					

Chip Breaker and clamping system

S P K N

Clearance angle of main cutting edge

Code	Clearance angle	Code	Clearance angle
A		B	
C		D	
E		F	
G		N	
P		O	Other Clearance angle

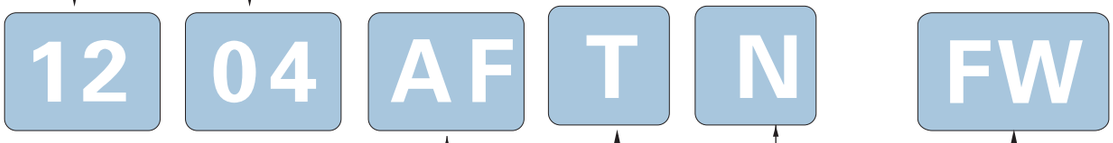
Tolerance

	Tolerance range	Inscribed circle tolerance(mm)	Thickness S Tolerance(mm)	(Reference) Details of M-class tolerance (Identied by shape and size) Nose height tolerance(mm)						
A	±0.005	± 0.025	± 0.025	Inscribed circle	Regular triangle	Square	Diamond with80°	Diamond with55 °	Diamond with35°	Round
F	±0.005	±0.013	± 0.025	6.35	±0.08	±0.08	±0.08	±0.11	±0.16	
C	±0.013	±0.025	± 0.025	9.525	±0.08	±0.08	±0.08	±0.11	±0.16	
H	±0.013	±0.013	± 0.025	12.7	±0.13	±0.13	±0.13	±0.15		
E	±0.025	± 0.025	± 0.025	15.875	±0.15	±0.15	±0.15	±0.18		
G	±0.025	±0.025	±0.13	19.05	±0.15	±0.15	±0.15	±0.18		
J	±0.005	±0.05-±0.13	± 0.025	25.4		±0.18				
K	±0.013	±0.05-±0.13	± 0.025	Tolerance inscribed circle Φ D1(mm)						
L	±0.025	± 0.05- ± 0.13	± 0.025	Inscribed circle	Regular triangle	Square	Diamond with80°	Diamond with55 °	Diamond with35°	Round
M	±0.08-±0.18	± 0.05- ± 0.13	±0.13	6.35	±0.05	±0.05	±0.05	±0.05	±0.05	
N	±0.08-±0.18	±0.05-±0.13	± 0.025	9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
U	± 0.1308- ± 0.38	± 0.08- ± 0.25	±0.13	12.7	±0.08	±0.08	±0.08	±0.08		±0.08
				15.875	±0.10	±0.10	±0.10	±0.10		±0.10
				19.05	±0.10	±0.10	±0.10	±0.10		±0.10
				25.4		±0.13				±0.13

INSERTS CODE CLASSIFICATION

Diameter of IC (mm)	Insert shape						
	C	D	R	S	T	V	W
							
3.97							
5.0			05				
5.56							
6.0	06		06				
6.35							06
8.0	09		08		06		
9.525		07	09	09			
10.0			10		09		08
12.0	12	11	12			11	10
12.7	16	16	12	12	11		
15.875			15	15		16	
16.0	19	15	16		16		
19.05		19	19	19			
20.0			20			22	
25.0	25		25		22		
25.4			25	25	27		
31.75			31				
32			32		33		
Length of Cutting edge							

Code	Insert thickness(mm) ★
00	0.79
T0	0.99
01	1.59
T1	1.98
02	2.38
T2	2.58
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.56
T5	5.95
06	6.35
T6	6.75
07	7.94
09	9.52
T9	9.72
11	11.11
12	12.70
Insert thickness	



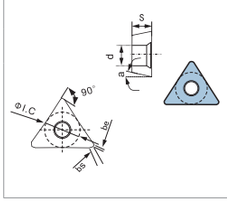
Wiper			
			
A	45°	A	30°
D	60°	B	50°
E	75°	C	70°
F	85°	D	15°
P	90°	E	20°
Z	Others	F	25°
		G	30°
		N	0°
		P	11°
		Z	Others

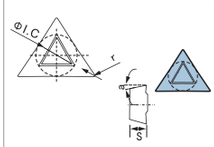
Chamfer (mm)			
F			K
E	0-5°	0-0.10	
	1-10 °	1-0.15	P
T	2- 15 °	2-0.20	
	3-20°	3-0.25	W
	4-25°	4-0.30	
S	5-30 °	5-0.35	
		6-0.40	
		7-0.45	No mark

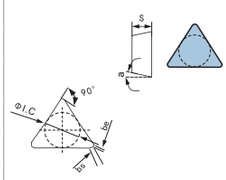
Chip Breaker Code

Cutting direction	
R	Right hand
L	Left hand
N	Neutral

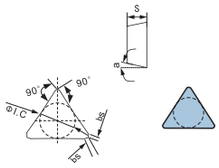
INSERTS FOR FACE MILLING

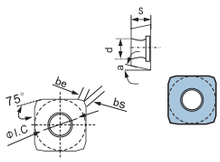
Shape of inserts	Type		Dimension (mm)						Grade recommendation												
									CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Φd	BS	Be	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	TPCW	2204PDL/R	12.7	4.76	5.5	1.4	0.7	11			•	•										
		2204PPL/R	12.7	4.76	5.5	1.4	0.7	11			•	•										

Shape of inserts	Type		Dimension (mm)				Grade recommendation													
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	r	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	TPMR	090204	5.56	2.38	0.4	11	•	•	•	•										
		110304	6.35	3.18	0.4	11	•	•												
		110308	6.35	3.18	0.4	11			•	•										

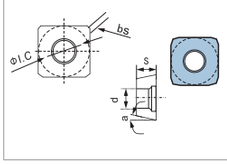
Shape of inserts	Type		Dimension (mm)					Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Bs	Be	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	TPKN	1603PPL/R	9.525	3.18	1.2	≈0.7	11	•	•												•
		1603PDL/R	9.525	3.18	1.2	≈0.7	11	•	•												•
		2204PDL/R	12.7	4.76	1.4	≈0.7	11	•	•												•
	TPAN	1603PDL/R	9.525	3.18	1.3	≈0.7	11	•	•												•
		2204PDL/R	12.7	4.76	1.4	≈0.7	11	•	•												•
	TPCN	1603PDL/R	9.525	3.18	1.3	≈0.7	11														
		2204PDL/R	12.7	4.76	1.4	≈0.7	11														
	TECN	1603PEL/R	9.525	3.18	2	0.3 ~ 0.4	20														
	TDKN TEKN TFAN	2204PDL/R	12.7	4.76	1.4	≈0.7	15														
		2204PDL/R	12.7	4.76	1.4	≈0.7	20														
		2203PFL/R	12.7	3.18	2.5	≈0.7	25														

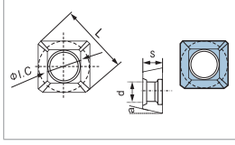
INSERTS FOR FACE MILLING

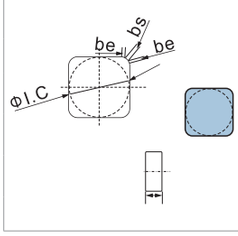
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			ΦI.C	S	Bs	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	TPAN	1103PPN 1603PPN	6.35 9.525	3.18 3.18	0.7 1.2	11 11						• •								
		2204PPN	12.7	4.76	1.3	11						•								
	TPCN	1103PPN 1603PPN	6.35 9.525	3.18 3.18	0.7 1.2	11 11						• •								
		2204PPN	12.7	4.76	1.3	11						•								
	TPKN	1103PPN 1603PPN	6.35 9.525	3.18 3.18	0.7 1.2	11 11														
		2204PPN	12.7	4.76	1.3	11														

Shape of inserts	Type		Dimension (mm)						Grade recommendation											
									CVD coating grade		PVD coating grade							Ceramic		Uncoated grade
			ΦI.C	S	d	BS	Be	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPKW	1204EDFL/R 1204EDFL/R	12.7 12.7	4.76 4.76	5.5 5.5	1.4 1.4	1	11 11														
		1204EDFL/R	12.7	4.76	5.5	1.4	1	11														
	SPCW	1504EDFL/R 1504EDFL/R	15.875 15.875	4.76 4.76	5.5 5.5	1.5 1.5	1 1	11 11														

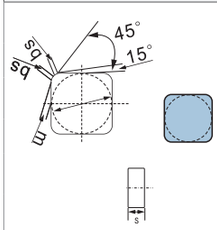
INSERTS FOR FACE MILLING

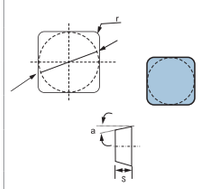
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		I.C	S	D	α °	Bs	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SEEW1504AFN	15.875	4.76	5.5	20	2.85			•	•										

Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		I.C	S	D	α °	Bs	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SEKT1204AESN	12.7	4.76	5.5	20	15.23			•	•										

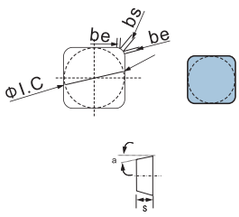
Shape of inserts	Type		Dimension (mm)				Grade recommendation													
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Bs	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SNAN	1204ANN 1504ANN	12.7 15.875	4.76 4.76	2 2.5								• •							
		1904ANN	19.05	4.76	3								•							
	SNCN	1204ANN 1504ANN	12.7 15.875	4.76 4.76	2 2.5															
		1904ANN 1904ADSN	19.05 19.05	4.76 4.76	3 4	0.5														
	SNKN	1204ANN 1504ANN	12.7 15.875	4.76 4.76	2 2.5															
		1904ANN	19.05	4.76	3															

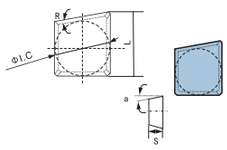
INSERTS FOR FACE MILLING

Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			I.C	S	Bs	m	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SNAN	1204ENN 1504ENN	12.7 15.875	4.76 4.76	4 1.4	0.8 1.5							• •							
		1904ENN	19.05	4.76	2	1.3							•							
	SNCN	1204ENN 1504ENN	12.7 15.875	4.76 4.76	1.4 4	0.8 1.5							• •							
		1904ENN	19.05	4.76	2	1.3							•							
	SNKN	1204ENN 1504ENN	12.7 15.875	4.76 4.76	4 1.4	0.8 1.5														
		1905ENN	19.05	4.76	2	1.3														

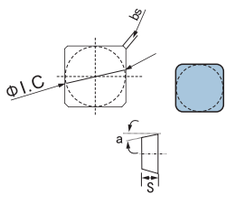
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			I.C	S	α °	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPGN	090304	9.525	3.18	11	0.4														
	SPGN	090308	9.525	3.18	11	0.8														
		120308	12.7	3.18	11	0.8														
	SPEN	120408	12.7	4.76	11	0.8														
	SPGN	120404 120408	12.7 12.7	4.76 4.76	11 11	0.4 0.8														
	SPEN	150412 190416	15.875 19.05	4.76 4.76	11 11	1.2 1.6														

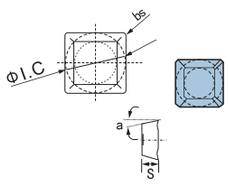
INSERTS FOR FACE MILLING

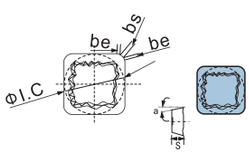
Shape of inserts	Type		Dimension (mm)					Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			ΦI.C	S	Bs	Be	α°	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPCN	1204APN	12.7	4.76	2.22		11														
		1904APN	19.05	4.76	4.48		11														
	SECN	1203AEN	12.7	3.18	2.48		20						•								
	SDKN	1504AEN	15.875	4.76	1.9		15						•								
	SEEN	1203AFFN	12.7	3.18	1.8		20						•								
	SEKN	1203AFTN-1	12.7	3.18	1.8	r 1	20						•								
		1203AFN	12.7	3.18	2.46		20						•								
		1204AFN	12.7	4.76	1.8		20						•								
		1204AFTN	12.7	4.76	1.8		20						•								
		1504AFN	15.875	4.76	1.6		20														
		1504AFTN	15.875	4.76	1.6		20														
	SPKN	1504AFTN	15.875	4.76	1.8		11														
	SEMN	1204AEN	12.7	4.76	2.1		20														

Shape of inserts	Type		Dimension (mm)					Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			I.C	S	α°	R	L1	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPEX	1203EDL/R	12.7	3.18	11	500	15														
	SPKX	1504EDFL/R	15.88	4.76	11	500	19.37														

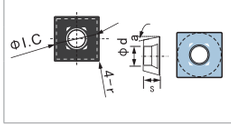
INSERTS FOR FACE MILLING

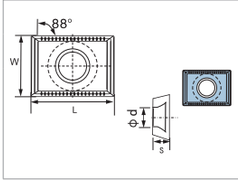
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
		I.C	S	r	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SEMN1203AFTN	12.7	3.18		20														

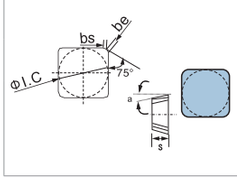
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			I.C	S	r	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPMR	090304 091304	9.525 9.525	3.18 3.97	0.4 0.4	11 11							• •							
		090308 120304	9.525 12.7	3.18 3.18	0.8 0.4	11 11							• •							
		120308 120312	12.7 12.7	3.18 3.18	0.8 1.2	11 11							• •							

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	α °	Bs	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SEKR	1203AZ-YM 12T3AZ-MY	12.7 12.7	3.18 3.98	20 20	1.6 1 6	0.8 0.8													
		1204AZ-MY 1504AZ-YM	12.7 12.7	4.76 4.76	20 20	1.6 1.6	0.8 0.8													

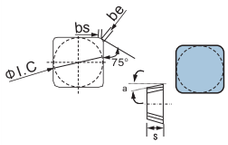
INSERTS FOR FACE MILLING

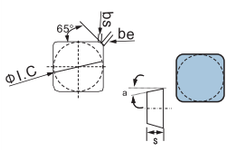
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	α °	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SMPT	120408-D51	12.7	3.97	11	5.5	0.8														
		09T308-D51	9.525	4.76	11	4.4	0.8														

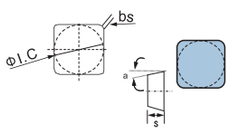
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			L	W	S	D	R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	LMPT	150412R-D51	15.875	12.7	4.91	5.5	1.2														
		15T308R-D51	15	9.525	3.97	4.4	0.8														

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	α °	Bs	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPKN	1203EDFL/R 1203EDFL/R	12.7 12.7	3.18 3.98	11 11	1.4 1.4	≈1 ≈1							• •							
		1504EDFL/R 1504EDFL/R	15.875 15.87	4.76 54.76	11 11	1.4 1.4	≈1 ≈1							• •							

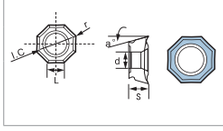
INSERTS FOR FACE MILLING

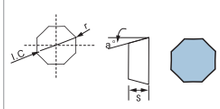
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			I.C	S	α °	Bs	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPAN	1203EDL/R 1504EDL/R	12.7 15.875	3.18 4.76	11 11	1.4 1.4	≈ 1 ≈ 1							• •							
	SPCN	1504EDL/R 1203EDL/ R	15.875 12.7	4.76 3.18	11 11	1.4 1.4	≈ 1 ≈ 1							• •							
	SPKN	1504EDL/R 1203EDL/R	15.875 12.7	4.76 3.18	11 11	1.4 1.4	≈ 1 ≈ 1							• •							
	SECN	1203EEL/R	12.7	3.18	20	2.5								•							
	SFAN	1203EFL/R	12.7	3.18	25	2.5															

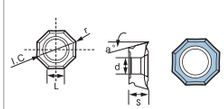
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			I.C	S	α °	Bs	Be	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPKN	1204ZETL/R 1504ZEFL/R	12.7 15.875	4.76 4.76	11 11	1.93 2	0.6 0.8														
	SPCN	1504ZETL/R	15.875	4.76	11	2	1														

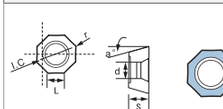
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		ΦI.C	S	r	ϰ °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SDHW0903AEFN	9.53	3.18	0.75	15														

INSERTS FOR FACE MILLING

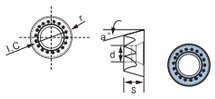
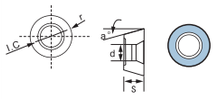
Shape of inserts	Type		Dimension (mm)						Grade recommendation													
									CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			L	ΦI.C	S	D	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	OFMT	05T305-NN	5.26	12.7	3.97	4.4	0. 5	25							•							
		070405-NN	7.46	18	4.76	5.5	0.5	25							•							

Shape of inserts	Type	Dimension (mm)				Grade recommendation														
						CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		ΦI.C	S	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	HEEN532	15.875	4.76	0.8	20														

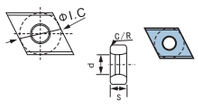
Shape of inserts	Type	Dimension (mm)						Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	ΦI.C	S	D	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	0FER070405NN	7.46	18	4.76	2.3	0.5	25							•							

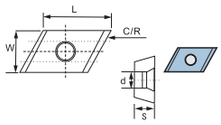
Shape of inserts	Type	Dimension (mm)						Grade recommendation													
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	ΦI.C	S	D	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	0DHW0504ZZN	5.26	12.7	4.76	4.4	0.5	15														

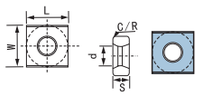
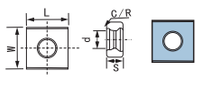
INSERTS FOR FACE MILLING

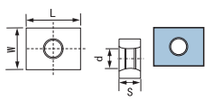
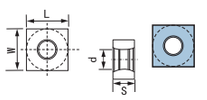
Shape of inserts	Type		Dimension (mm)				Grade recommendation											
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	RPMT	0803M0E-G 10T3M0E-G	8 10	3.18 3.97	3.4 4.4	11 11			• •	• •	• •									
		1204M0E-G 10T3M0E-BJS	12 10	4.76 3.97	4.4 4.4	11 11			• •	• •	• •									
		1204M0E-BJS 0827M0-BJS	12 8	4.76 2.7	4.4 3.4	11 11			• •	• •	• •									
	RPMW	0803M0E 1003M0E	8 10	3.18 3.18	3.4 4.4	11 11			• •	• •										
		10T3M0E 1204M0E	10 12	3.97 4.76	4.4 4.4	11 11			• •	• •										

INSERTS FOR HEAVY OPERATIONS

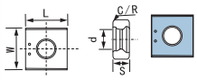
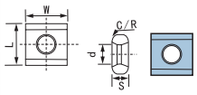
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	w	s	d	C/R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	CNE	44102 323-405	12.7 12.7	12.7 9.525	6.35 4.76	5.4 4.3	C0.5 C0.5					• •									
		44-405 454-4R1	12.7 16.3	12.7 14.288	6.35 6.35	5.5 5.5	C0.5 R1.0					• •									

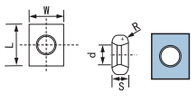
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	C/R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	CDE05T305-NN	12.7	9.525	4.76	5.5	C1.0														
	CDE070405-NN	12.7	9.525	4.76	5.5	C1.0														

Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	C/R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	LNE434-02	19.05	14.29	6.35	5.4	C1.0														
	N18404-JH	15.875	12.7	7.94	5.5	C0.4														
	LNE0904TL- <D4.1	9.53	9.53	4.76	4.1	C0.5														

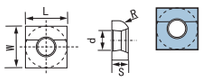
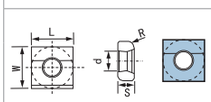
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	N18-1 L19.05*14.3*	15.875 19.05	12.7 14.29	7.94 6.35	5.5 5.35						• •								
	6.35-R7-<P5.35																		
	SNE33-01	9.525	9.525	4.76	4.4														
	SNC44 SNC55	12.7 15.875	12.7 15.875	6.35 7.94	4.4 5.5														

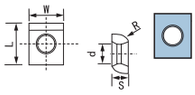
INSERTS FOR HEAVY OPERATIONS

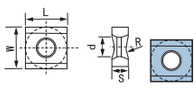
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
		L	W	S	d	C/R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	LND424-DA GLDL20023R4	13 12.7	12.7 12.7	6.35 6.35	6 5.5	2-R2 4-R0.4						• •								
	N136	15.875	12.7	7.94	5.5	4-R2						•								
	GLOL20023R4	15.875	12.7	6.35	5.4	R 5.0														
	SNE1507-4R3	15.88	15.8	87.94	5.5	R 3.0														
	LNC305-YT	17.46	12.7	7.15	5.5	R 5. O														

Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
		L	W	S	d	C/R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	LNE323-02 LND624-DA	15.875 15.5	9.525 12.7	4.76 7.35	4.4 6	2 2R2					•									
	N135	15.88	9.52	7.94	5.5	13														

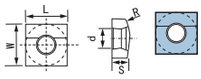
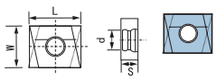
INSERTS FOR HEAVY OPERATIONS

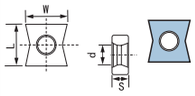
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SN155R10-P50 SN55R8-EB50	15.875 16.875	15.875 16.875	7.94 7.94	5.5 5.5	10 8														
	SN55R 6.5	15.875	15.875	7.94	5.5	6.5														
	SN55R40	15.875	15.875	7.94	5.5	40														

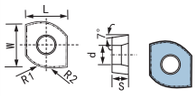
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	GL0L20021R5 N182R5-JH	15.28 15.875	12.7 12.7	7.94 7.94	5.4 5.5	5.0 5.0					• •									
	LNC306 FNC306-YT	15.875 23.5	12.7 115	7.15 6.4	5.5 4.4	4.7 6.5					• •									
	FNC484-103	51	14.3	6.3	5.6	6.3					•									

Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		L	W	S	d	R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SN55RK-33	15.875	15.875	7.93	5.5	12.7														
	SN55-R15-R00P50	15.875	15.875	7.93	5.5	15														

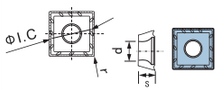
INSERTS FOR HEAVY OPERATIONS

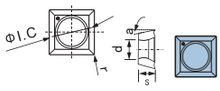
Shape of inserts	Type	Dimension (mm)					Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		L	W	S	d	R	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	LNE425-R13	15.875	12.7	7.93	5.5	13														
	SN55R20-P50	15.875	15.875	7.93	5.5	20														
	SNC55R18-EB50	15.875	15.875	7.93	5.5	18														
	LNHX1906	19	14.3	6.35	5.5															
	LNHX2509	25.4	14.3	6.35	5.5															

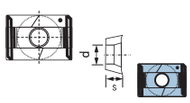
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		L	W	S	d	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	NXE324-104	12.7	11.89	6.35	4.5					•									
	LNKX1506PN-N-MM	15	13.9	6	4.6					•									

Shape of inserts	Type	Dimension (mm)						Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		L	W	S	d	R1	R2	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	DIN7168-M	15.875	114.53	6	5.4	8.0	22														

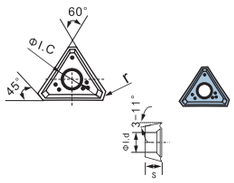
INSERTS FOR DRILLING

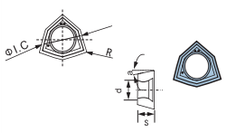
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPGT	060204-PM	6	2.38	2.6	0.4						•								
		07T308-PM	7.94	3.97	2.8	0.8						•								
		090408-PM	9.8	4.3	4.2	0.8						•								
		110408-PM	11.5	4.76	4.4	0.8						•								
		140512-PM	14.3	5.2	5.75	12						•								

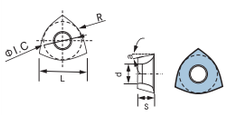
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPMG	05020-4ZV	5.56	2.38	2.5	0.4						•								
		060204-ZV	6.0	2.38	2.8	0.4						•								
		07T308-ZV	7.94	3.97	2.8	0.8						•								
		090408-ZV	9.8	4.3	4.1	0.8						•								
		110408-ZV	11.5	4.76	4.1	0.8						•								
		140512-ZV	14.3	5.56	5.5	1.2						•								

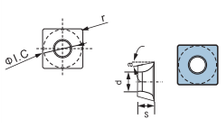
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		I.W	L	S	d	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	APMT1504T-WT	15.88	12.7	4.76	5.5														

INSERTS FOR DRILLING

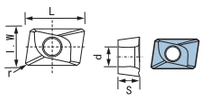
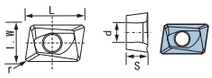
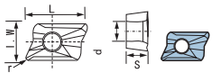
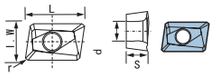
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	TPMX	1403-RG	8.45	3.55	2.88	0.80						• •								
		1704-RG 2405-RG	10.30 14.21	4.02 5.50	3.90 4.40	0.80 1.20						• •								

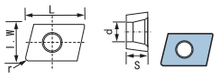
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade									Ceramic	Uncoated grade
			I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	WCGX	030204-ZV 04020-4ZV	5.56 6.35	2.38 2.38	2.5 2.8	0.4 0.4			• •		• •									
		050308-ZV 06T308-ZV	7.94 9.525	3.18 3.97	3.4 4.4	0.8 0.8			• •		• •									
		08040-8ZV	12.7	4.76	5.5	0.8			•		•									

Shape of inserts	Type		Dimension (mm)						Grade recommendation												
									CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	L	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	ZDET	08T2R10 1103R12.5	6.75 8.5	2.78 3.18	2.8 2.8	8.4 10.6	10 12.5	14 14						• •								
		13T3R16	10.5	3.97	4.4	13.2	13.2	14						• •								
	ZPNT	2204R20 2204R25	12.7 12.7	4.76 4.76	5.5 5.5	16 . 16.9	16.1 16.9	11 11						• •								
		2204R31	12.7	4.76	5.5	17.6	17.6	11						•								

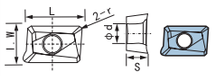
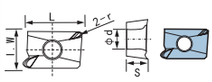
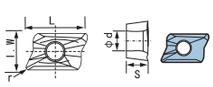
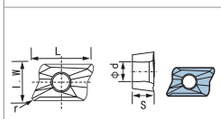
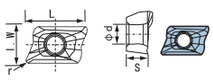
Shape of inserts	Type		Dimension (mm)						Grade recommendation												
									CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	L	R	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPMT	060304 120408	6.35 12.7	3.18 4.76	2.8 5.5	6.35 12.7	0.4 0.8	11 11				• •	• •									
	SDMT	090308	9.525	3.18	4.4	9.525	0.8	15				•	•									

INSERTS FOR SHOULDER MILLING

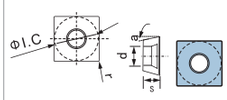
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.W	L	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	APMT	1135PDER-H2	6.2	11.21	3.5	2.8	0.8			•	•	•									•
		1604PDER-H2	9.28	17.15	4.76	4.4	0.8			•	•	•									•
	APMT	160432PDER-H8	9.33	16.31	4.76	4.4	3.2			•	•	•									•
	APMT	1135PDER-M2	6.2	11.21	3.5	2.8	0.8			•	•	•									•
		1604PDER-M2	9.28	17.15	4.76	4.4	0.8			•	•	•									•
	APMT	1135PDER-EM	6.24	11.2	3.5	2.8	0.8			•	•	•									•
		1604PDER-EM	9.41	17.24	5.28	4.4	-			•	•	•									•
		170508-EM	10.8	18.54	5.56	4.4	0.8			•	•	•									•
		170516R-EM	10.8	18.54	5.56	4.4	1.6			•	•	•									•
	APKT	1135DFR-G2	6.17	11.31	3.5	2.8	0.8			•	•	•									•
		113504PDFR-G2	6.17	11.31	3.5	2.8	0.4			•	•	•									•
		1604PDFR-G2	9.525	17.12	4.76	4.4	0.8			•	•	•									•

Shape of inserts	Type	Dimension (mm)					Grade recommendation													
							CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
		I.W	L	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	APKW160404	9.525	16.8	4.76	4.4	0.4														•

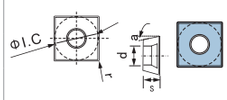
INSERTS FOR SHOULDER MILLING

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade									Ceramic		Uncoated grade
			I.W	L	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	APKT	1003PDSR-30 1604PDSR-30	6.66 9.53	11.09 17.	3.5 5.2	2.8 4.4	0.4 0.6						• •								• •
	APLX	1003PDTR-LMNA	6.73	11.21	3.5	2.8	0.4						•								•
	APKT	1604PDTR-LMNA	9.525	17.03	4.76	4.4	1						•								•
	BR390-11T308-PM		6.9 9.6	11.72 17.82	3.58 4.76	2.8 4.12	0.8 0.8						• •								• •
	BR390-11T308-PL		6.9	11.72	3.58	2.8	0.8						•								•
	AOMTI	120408R-FA	7.66	14.04	4.76	3.4	0.8						•								•
		12430R-FA	7.6	12.8	4.76	3.4	4						•								•

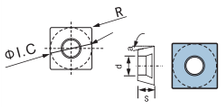
INSERTS FOR CHAMFER MILLING

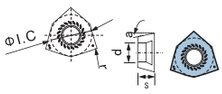
Shape of inserts	Type	Dimension (mm)				Grade recommendation												
						CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SPMT120408	12.7	76	5.5	0.8				•	•									

D10 INSERTS FOR T-SLOT MILLING

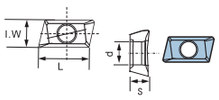
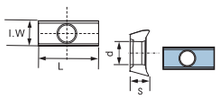
Shape of inserts	Type		Dimension (mm)				Grade recommendation												
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	MPHT	060304-MD 080305-MD	6.35 8.3	3.18 3.18	2.8 3.4	0.4 0.5				• •									
		120408-MD	12.7	4.76	5.5	0.8													

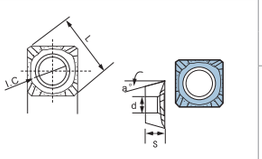
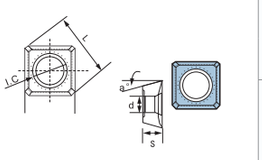
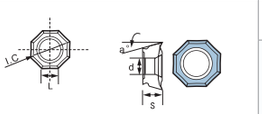
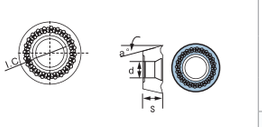
INSERTS FOR HIGH FEED MILLING

Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	r	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SDMT	09T312-MD	9.525	3.97	4	1.2	15			•											
		120412-MD	12.7	4.76	4.4	2	15			•											

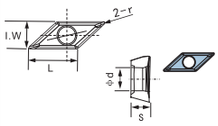
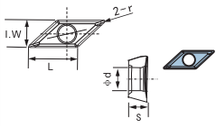
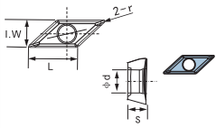
Shape of inserts	Type		Dimension (mm)					Grade recommendation												
								CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
			I.C	S	d	r	α °	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	WPGT	050315ZSR	7.94	3.5	4	1.5	11			•											
		060415ZSR	9.525	4.2	4.4	1.5	11			•											
		080615ZSR	12.85	6.35	5.5	1.5	11			•											
		090725ZSR	15	7	5.5	2.5	11			•											

INSERTS FOR HIGH FEED MILLING

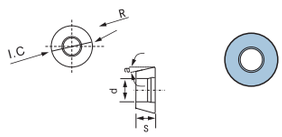
Shape of inserts	Type		Dimension (mm)					Grade recommendation											
								CVD coating grade		PVD coating grade							Ceramic		Uncoated grade
			I.W	L	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	APKT	11T304-LH	6.5	12.24	3.6	2.8	0.4				•										
		11T308-LH	6.5	12.24	3.6	2.8	0.8				•										
	APKT	160402PDFR-LH	9.8	16.88	4.76	4.4	0.2				•										
		160404PDFR-LH	9.8	16.88	4.76	4.4	0.4				•										
		160408PDFR-LH	9.8	16.88	4.76	4.4	0.8				•										
		160416PDFR-LH	9.8	16.88	4.76	4.4	1.6				•										
		160432PDFR-LH	9.8	16.88	4.76	4.4	3.2				•										

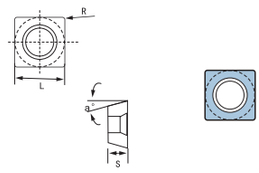
Shape of inserts	Type		Dimension (mm)					Grade recommendation											
								CVD coating grade		PVD coating grade							Ceramic		Uncoated grade
			I.C	S	d	α °	L	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	SEKT SDHT	1204AFFN-LH2	12.7	4.76	5.5	20	16														
		1204AFFN-LH2	12.7	4.76	5.5	15	15.76														
	SDKT	13T3AEFN-LH	13.4	3.97	4.4	20					•										
		13T3AZFN-LH	13.4	3.97	4.4	20					•										
		0903AEFN-LH1	9.525	3.18	3.4	15					•										
		090AEFN-LH	9.525	3.18	3.4	15					•										
	OFGR	07040-4LH	17.94	4.76	0.4	25					•										
		070408-LH	17.94	4.76	0.8	25															
	RCGT	0602M0F-LH	6	2.38	2.8	7															
		0803M0F-LH	8	3.18	3.4	7															
		1003MO-LH	10	3.18	4.4	7															
		10T3M0-LH	10	3.97	4.4	7															
		1204M0-LH	12	4.76	4.4	7															

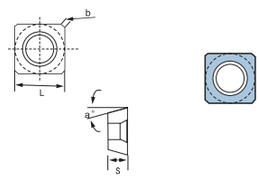
INSERTS FOR ALUMINUM MILLING

Shape of inserts	Type	Dimension (mm)					Grade recommendation											
							CVD coating grade		PVD coating grade								Ceramic		Uncoated grade
		I.W	L	S	d	r	GTK10	GTK12	AG2300	AG2320	AG2330	GS3420	GS3430	GS2330	GS1223	GS1299	GS1221S	GL2221	GL1322	GL1320
	XDGT2206PDFR-LH	13.67	30	6.35	5.67	0.8					•									
	XEKT19M530FR-LH	11.38	22.05	5	4.4	3					•									
	XPGT13T3PDFR-LH	7.78	14.7	3.97	3.4	0.4					•									

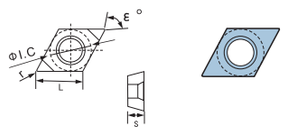
OTHER

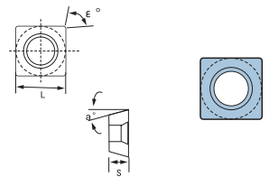
Inserts shape	Type	Dimension(mm)			
		I.C	S	α°	d
	P22215-00 P22215-14	8 12	2.38 4. 76	14 11	3.4 5.5

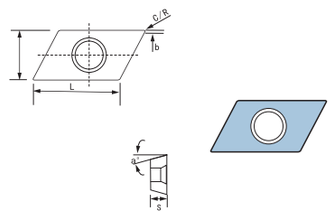
Inserts shape	Type	Dimension(mm)			
		L	S	α°	r
	P2801-0 P2808-1	9.52 12.7	3.18 4.76	14 11	0.8 0.8
	P2809-1 P28415-00	12.7 6.35	4.76 3.18	11 11	0.8 0.4
	P28415-0 P28495-1	9.52 12.7	3.18 4.76	14 11	0.8 0.8
	P2800-0 P2800-2	9.52 15.88	3.18 4.76	11 11	0.8 1.2
	P2816-1	12.7	4.76	11	C0.7

Inserts shape	Type	Dimension(mm)			
		L	S	α°	b
	P2894-1 P2894-2	12.7 15.88	4.76 4.76	20 20	2 2.1
	P2803-1R P2803-1L	12.7 12.7	4.76 4.76	11 11	1.4 1.4
	P28451-1	12.7	4.76	11	1.4

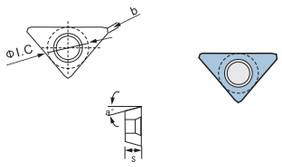
OTHER

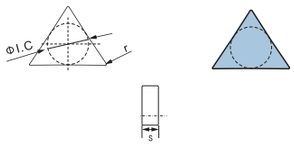
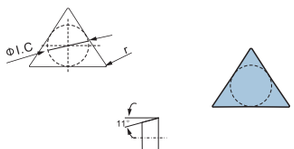
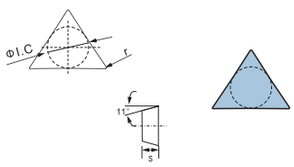
Inserts shape	Type	Dimension(mm)					
		I.C	L	S	α °	ε °	r
	P29221-04	6.35	6.45	2.38	7	80	0.4
	P29221-14	9.525	9.67	3.97	7	80	0.4
	P29223-02	6.35	6.45	2.38	7	80	0.2
	P29223-12	9.525	9.525	3.97	7	80	0.2

Inserts shape	Type	Dimension(mm)			
		L	S	α °	ε °
	P28467-1	6.35	2.38	14	90
	P28467-2	7.8	3.18	14	90
	P28467-3	9.52	3.97	11	96
	P28467-4	11	3.97	11	96
	P28467-5	12.7	4.76	11	96
	P28467-6	15	4.76	11	96
	P28467-7	17.6	5.56	11	96
	P28467-1	6.35	2.38	14	90
	P28467-2	7.8	3.18	14	90
	P28467-3	9.52	3.97	11	96
	P28467-4	11	3.97	11	96
	P28467-5	12.7	4.76	11	96
	P28467-6	15	4.76	11	96
	P28467-7	17.6	5.56	11	96

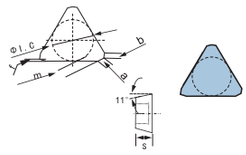
Inserts shape	Type	Dimension(mm)					
		L	W	S	α °	C/R	b
	P2700-0	8.3	8.3	3.18	11	R0.5	
	P2700-3R	15	9.52	3.18	14	R0.8	
	P2700-3L	15	9.52	3.18	14	R0.8	
	P2703-3R	15	12.7	3.18	14		1.4
	P2703-4R	20	12.7	4.76	11		1.5
	P2706-3R	15.88	12.7	4.76	11	C1.1	
	P2706-4R	20	12.7	4.76	11	C0.8	
	P2706-4L	20	12.7	4.76	11	C0.8	
	P2707-3R	15.88	12.7	4.76	11	C1.1	
	P2707-4R	20	12.7	4.76	11	C0.8	
	P2707-4L	20	12.7	4.76	11	C0.8	

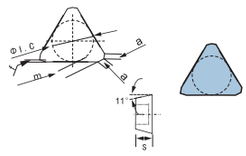
OTHER

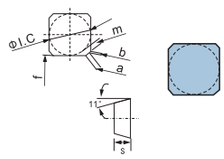
Inserts shape	Type	Dimension(mm)			
		I.C	S	α °	b
	P2603-2	9.52	4.76	11	1.2
	P2603-3	12.7	4.76	11	1.2

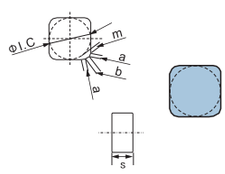
Inserts shape	Type	Dimension(mm)		
		I.C	S	r
	304050	4.0±0.05	2.5±0.13	0.5
	307050	7.0±0.05	3.0±0.13	0.5
	310030	10.0±0.05	3.5±0.13	0.5
	313050	13.0±0.08	4.5±0.13	0.5
	316050	16.0±0.10	5.5±0.13	0.5
	316100	16.0±0.10	5.5±0.13	1
	307058	1.0±0.05	3.0±0.13	0.5
	310058	10.0±0.05	3.5±0.13	0.5
	313058	13.0±0.05	4.5±0.13	0.5
	313108	13.0±0.08	4.5±0.13	1
	316058	16.0±0.10	5.5±0.13	0.5
	316108	16.0±0.10	5.5±0.13	1
	3070511	7.0±0.05	3.0±0.13	0.5
	3100511	10.0±0.05	3.5±0.13	0.5
	3130511	13.0±0.05	4.5±0.13	0.5
	3131011	13.0±0.08	4.5±0.13	1
	3160511	16.0±0.10	5.5±0.13	0.5
	3161011	16.0±0.10	5.5±0.13	1

INSERTS

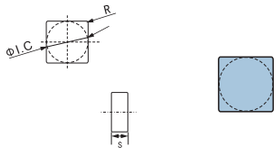
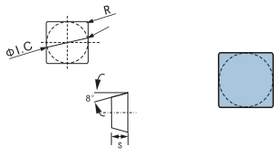
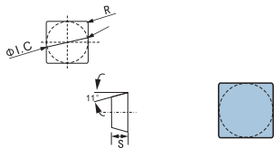
Inserts shape	Type		Dimension(mm)					
	Left	Right	I.C±0.025	S±0.025	M±0.013	a	b	f
	3XH06Y 3XH0BY	3XH06Z 3XH0BZ	6 8	2.8 3.5	1.651 2.23	0.8 1	0.2 0.3	0.1 0.1
	3XH10Y 3XH13Y	3XH10Z 3XH13Z	10 13	3.5 4.5	2.756 3.669	1.2 1.4	0.5 0.7	0.2 0.4
	3XH16Y	3XH16Z	16	5.5	4.528	1.6	1	0.6

Inserts shape	Type	Dimension(mm)				
	Left	I.C±0.025	S±0.025	M±0.013	a	f
	3XH07 3XH10	7 10	3 3.5	1.696 2.621	1 1.2	0.2 0.2
	3XH13 3XH16	13 16	4.5 5.5	3.548 4.469	1.4 1.6	0.4 0.6

Inserts shape	Type		Dimension(mm)					
	Left	Right	I.C±0.025	S±0.025	M±0.013	a	b	f
	4XH13Y 4XH16Y	4XH13Z 4XH16Z	13 16	3.5 4.5	0.926 1.263	1.4 1.4	1 1	0.2 0.4
	4XH19Y 4XH25Y	4XH19Z 4XH25Z	19 25	5.5 7	1.513 2.186	1.6 1.6	1.2 1.2	0.4 0.6

Inserts shape	Type	Dimension(mm)				
		I.C±0.025	S±0.025	M±0.013	a	b
	4X13 4X16	13 16	4 4.5	0.834 1.171	1.4 1.4	1 1
	4X19 4X25	19 25	5.5 7	1.408 2.082	1.6 1.6	1.2 1.2

INSERTS

Inserts shape	Type	Dimension(mm)		
		I.C	S	r
	410050	10±0.05	3.5±0.13	0.5
	413050	13±0.08	4.5±0.13	0.5
	413100	13±0.08	4.5±0.13	1
	413200	13±0.10	4.5±0.13	2
	416050	16±0.10	4.5±0.13	0.5
	416100	16±0.10	4.5±0.13	1
	416200	16±0.10	4.5±0.13	1
	419100	19±0.10	5.5±0.13	2
	419200	19±0.10	5.5±0.13	2
	410058	10±0.05	3±0.13	0.5
	413058	13±0.08	3.5±0.13	0.5
	413108	13±0.08	3.5±0.13	1
	416058	16±0.10	4.5±0.13	0.5
	416108	16±0.10	4.5±0.13	1
	416158	16±0.10	4.5±0.13	1
	419108	19±0.10	5.5±0.13	1.5
	419208	19±0.10	5.5±0.13	1
	420108	20±0.13	7.o±o.13	2
	4100511	10±0.05	3±0.13	0.5
	4130511	13±0.08	3.5±0.13	0.5
	4130511T	13±0.08	4.5±0.13	0.5
	413011	13±0.08	3.5±0.13	1
	413011T	13±0.08	4.5±0.13	0.5
	4160511	16±0.10	4.5±0.13	1
	4161011	16±0.10	4.5±0.13	1
	4161511	16±0.10	4.5±0.13	1.5
	4191011	19±0.10	5.5±0.13	1
	4192011	19±0.10	5.5±0.13	2
	4251011	25±0.13	7.o±o.13	1
	4252011	25±0.13	7.0±0.13	2

GENERAL TECHNICAL DATA

CEMENTED CARBIDE PRODUCTS SAFETY STANDARD

1. SAFETY RESPONSIBILITIES

Before using our products, please provide necessary safety :raining for operators, and carefully read the 'NOTE' and CAUTION' contents on the product package. We are not Table for any responsibility caused by not complying with the Request for operation.

2. FEATURES OF CEMENTED CARBIDE MATERIALS

Cemented carbide cutting tools are mainly composed of W, C, o, N, Ti, Si, Al, 0, etc elements and their chemical compound, and come into shape after sintering and a series of subsequent 11achining. Cemented carbide tool has good chemical stability, high strength and very good wear resistance. It is the ideal to ol to cut most metals and high-strength nonmetals.

3. CAUTIONS FOR SAFELY USING CEMENTED CARBIDE TOOLS

1) Cemented carbide cutting tools are hard and frangible material, liable to brittle rupture and breakage due to larger force or partial stress, cutting tools have sharp edge.
2) In the cutting process, it is unavoidable to generate chips and brittle discs, etc. Please make sure necessary labor protection articles are prepared before machining.
3) Most cemented carbide is mainly composed of W and Co with high density. In the process of transport and storage, it should be treated as great heavy object and be handled with care.
4) Cemented carbide tools should be stored in dry environment, away from corrosive atmosphere.
5) Cemented carbide and steel have different thermal expansion coefficients. To avoid breakage caused by concentrated stress, welding should be conducted under suitable temperature.
6) For longer life of machine tool and cutting tools, Coolant is needed in the cutting process, please select correct coolant to prolong machine and tool life.
7) If cracks are generated in the machining process, please stop using the tool.
8) Long use of cemented carbide tool will lead to cutting edge passivation and lower strength. Please make sure it is regrinded by professionals.
9) Pleasecollect the broken tools and chips properly to avoid injury to other people.

GENERAL TECHNICAL DATA

CAUTIONS FOR SAFETY USING CUTTING TOOLS

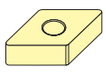
DANGER	PROTECTIVE MEASURE
During rotary cutting, clothes, gloves, etc. are easily to get wringed in the machine at high speed, thus cause casualties.	The operator should not wear gloves during rotary cutting.
	Please put your long hair in the working cap.
	Please pay attention that the clothes should not contact the operational parts of machine.
Improper use of tools may cause tool break age and expulsion from machine, causing injuries.	Please read catalogue and safety standard before operating.
	Please wear safeguard glasses and protective clothes.
Direct contact with the sharp cutting edges may cause injuries.	Please use labor protection articles such as gloves when assembling or disassembling cutting tools on machine.
In the cutting process, hot chips may cause scald and scratch on operator.	Please use tools such as pliers to clear away the chips in time.
	Please wear safeguard glasses, protective gloves and clothes.
Burrs on workpiece are very sharp and likely to cause injuries.	Do not touch the burrs on the workpiece with bare hand.
	Please wear protective gloves and clothes.
Machining workpiece held in firmly will cause tool breakage and spatter of workpiece.	Make sure the workpiece is clamped firmly.
	Please wear safeguard glasses, protective gloves and clothes.
If inserts or spare parts are not clamped properly, they may become loose and fly off, causing risk of injuries.	Make sure the inserts and spare parts are clamped firmly before machining.
During cutting at high speed, the chips flying off rapidly ma y cause injuries.	Safeguard articles such as protective cover, screen, etc. should be used.
	Please wear safeguard glasses, protective clothes and gloves.
Inserts or spare parts may fly off due to inertial centrifugal force at high cutting speed.	Use the tools within recommended cutting conditions.
	Please wear safeguard glasses and protective clothes.
Milling cutters have sharp cutting edges and direct contact with them may cause in juries.	For your safety, please wear protective gloves if you need to touch inserts.
Rapid increase of cutting resistance due to excessive abrasion and severe impact may lead to breakage of tool and spatter of chips, thus cause injuries to operator.	Change the tool with excessive abrasion without delay.
	Please wear safeguard glasses and protective clothes.
In cutting process, sparks and hot chips ma y cause fire and explosion hazard.	Clear away the Inflammable and explosive materials in the cutting area.
	Please make sure the fire extinguishers are ready for use.
At high speed, the machine will vibrate severely because of poor balance of holder, causing tool breakage.	Check whether the machine is loose or has any abnormal noise before cutting.
	Please wear safeguard glasses and protective clothes.
If Inserts and tool are c lamped too tightly with screw and clamp, they face the risk of break age and spatter.	Please do not clamp tools too tightly with bushing.
Off-center or poor balance of tools in rotating machining will cause vibration, breakage and splash of tool, thus will cause injuries.	Please use the tools within the range of recommended rotating speed.
	Check and adjust machine balance periodically.
Using the extremely small drill is likely to cause tool breakage and spatter, and it would be hard to take out the broken part.	Reduce tool vibration and conduct machining at suitable speed.
	Please wear safeguard glasses, protective clothes and gloves.
Machine and tools maybe damaged if they are used beside the range of specified purposes, thus may cause other risks	Please use them strictly according to instructions and specified purposes.

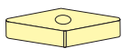
Note : We are not responsible for any accidents caused by private modified tools without our permission.

GENERAL TECHNICAL DATA

METRIC AND INCH COMPARISON TABLE OF INSERTS

C type negative angle	ISO	Inch	Chip Breaker
	090304	321	BF BM BR MT M (All round) (Without Chip Breaker)
	090308	322	
	120404	431	
	120408	432	
	120412	433	
	120416	434	
	160608	542	
	160612	543	
	160616	544	
	190608	642	
	190612	643	
	190616	644	
	190624	646	
	250724	856	
	250732	858	
	250924	866	
	250932	868	

D type negative angle	ISO	Inch	Chipbrekaer
	110404	331	BF BM BR MT M (All round) (Without Chip Breaker)
	110408	332	
	110412	333	
	150404	431	
	150408	432	
	150412	433	
	150604	441	
	150608	442	
	150612	443	
	150616	444	
	190608	542	
	190612	543	

V type negative angle	ISO	Inch	Chipbrekaer
	160404	331	(All round) (Without Chip Breaker)
	160408	332	
	160412	333	

V type negative angle	ISO	Inch	Chipbrekaer
	0903MO	32	
	1204MO	43	

W type negative angle	ISO	Inch	Chip Breaker
	06T304	3(2.5)1	BF BM BR MT M (All round) (Without Chip Breaker)
	06T308	3(2.5)2	
	06T312	3(2.5)3	
	060404	331	
	060408	332	
	060412	333	
	080404	431	
	080408	432	
	080412	433	

T type negative angle	ISO	Inch	Chip Breaker
	110304	221	BF BM BR MT M (All round) (Without Chip Breaker)
	110308	222	
	160404	331	
	160408	332	
	160412	333	
	220404	431	
	220408	432	
	220412	433	
	220416	434	
	270608	542	
	270612	543	
	270616	544	

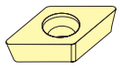
S type negative angle	ISO	Inch	Chip Breaker
	090304	321	BF BM BR MT M (All round) (Without Chip Breaker)
	090308	322	
	090312	323	
	120404	431	
	120408	432	
	120412	433	
	120416	434	
	160608	542	
	160612	543	
	160616	544	
	190412	633	
	190424	636	
	190612	643	
	190616	644	
	250724	856	
	250732	858	
	250924	866	
	250932	868	

GENERAL TECHNICAL DATA

METRIC AND INCH COMPARISON TABLE OF INSERTS

C type positive angle	ISO	Inch	Chip Breaker
	060202	2(.15)0	MP AK (Without Chip Breaker)
	060204	2(.15)1	
	060208	2(.15)2	
	09T302	3(.25)0	
	09T304	3(.25)1	
	09T308	3(.25)2	
	120404	431	
	120408	432	
	120412	433	

T type positive angle	ISO	Inch	Chip Breaker
	06T102	1.2(1.2)0	MP AK (Without Chip Breaker)
	06T104	1.2(1.2)1	
	06T108	1.2(1.2)2	
	090202	1.8(1.5)0	
	090204	1.8(1.5)1	
	090208	1.8(1.5)2	
	110202	2(1.5)0	
	110204	2(1.5)1	
	110208	2(1.5)2	
	110302	220	
	110304	221	
	110308	222	
	16T302	3(.25)0	
	16T304	3(2.5)1	
	16T308	3(.25)2	
	16T312	3(.25)3	
	160400	330	
	220408	432	
	220412	433	
	220416	434	
	270408	532	
	270412	533	
	330612	643	
	330616	644	

D type positive angle	ISO	Inch	Chip Breaker
	070202	2(1.5)0	MP AK (Without Chip Breaker)
	070204	2(1.5)1	
	070208	2(1.5)2	
	11T302	3(.25)0	
	11T304	3(.25)1	
	11T308	3(.25)2	
	11T312	3(.25)3	

S type positive angle	ISO	Inch	Chip Breaker
	060204	2(1.5)1	MP AK (Without Chip Breaker)
	09T302	3(.25)0	
	09T304	3(2.5)1	
	09T308	3(.25)2	
	120404	431	
	120408	432	
	120412	433	
	150404	531	
	150408	532	
	150412	533	
	190408	632	
	190412	633	
	190416	634	

V type positive angle	ISO	Inch	Chip Breaker
	110202	2(1.5)0	AK (Without Chip Breaker)
	110204	2(1.5)1	
	110208	2(1.5)2	
	110302	220	
	110304	221	
	110308	222	
	160402	330	
	160404	331	
	160408	332	
	160412	333	

CEMENTED CARBIDE ROCKWELL HARDNESS AND VICKERS HARDNESS COMPARIN TABLE

Vickers hardness (Hv3)	Rockwell hardness(HRA)
894	85.0
942	85.5
1004	86.0
1076	86.5
1140	87.0
1150	87.6
1200	88.1
1250	88.5
1330	89.0
1370	89.5
1400	89.9
1430	90.0

Vickers hardness (Hv3)	Rockwell hardness(HRA)
1450	90.1
1500	90.5
1560	91.0
1600	91.5
1650	91.7
1680	92.0
1700	92.3
1750	92.5
1800	93.0
1850	93.1
1900	93.5
1925	94.0

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