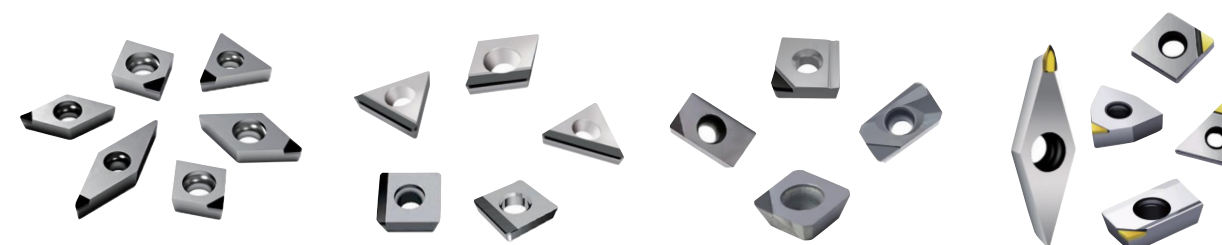


PROFESSIONAL MANUFACTURER

OF PCD MATERIALS R & D
AND CUTTING TOOLS PRODUCTION



HENAN WEGCL NEW MATERIALS CO.LTD

📍 Add | 5th Diamond Road, New Materials Industry, Science Road,
Zhengzhou, Henan, China

☎ Tel | +86 371-56705820

✉ Fax | +86 371-56705820

@ Email | info@scbntools.com/scbntools@gmail.com

🌐 Web | www.scbntools.com

HENAN WEGCL NEW MATERIALS CO.LTD

PCD TOOLS DISPLAY



PCD Turning Inserts



Full Side PCD Inserts



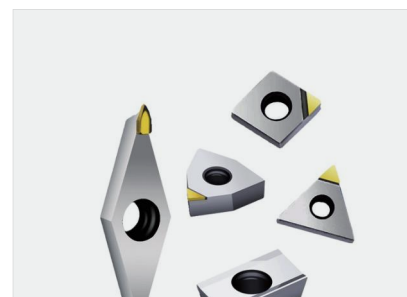
PCD Milling Inserts



PCD Chipbreaker Inserts



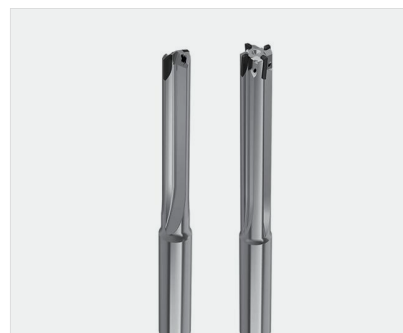
PCD Grooving Inserts



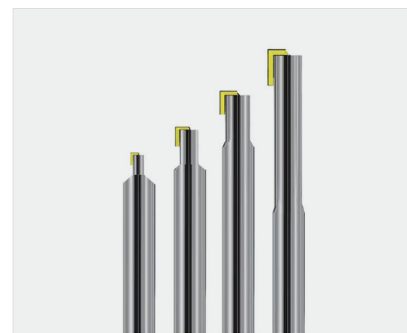
Monocrystalline Diamond Inserts



PCD End Mills



PCD Reamers



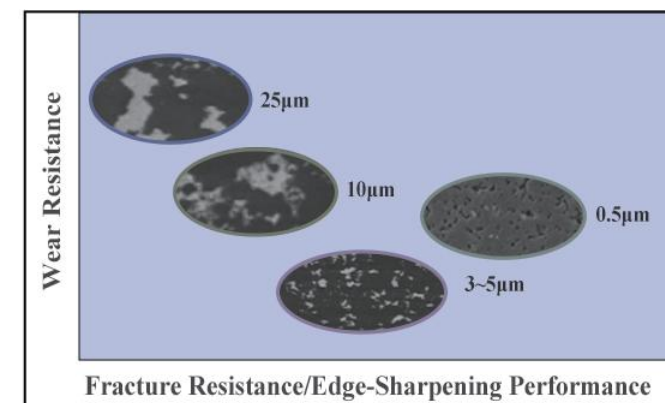
Monocrystalline End Mills

INTRODUCTION OF PCD MATERIALS

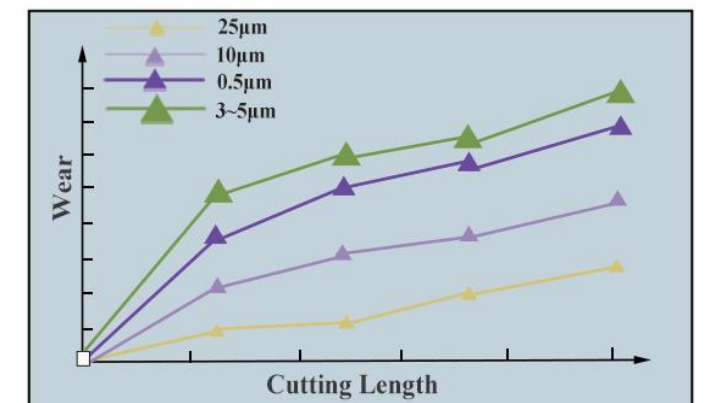
PCD is the abbreviation of Polycrystalline Diamond, which is a superhard material made of diamond powder and metal binder sintered under high temperature and high pressure. PCD has extremely high hardness, wear resistance and thermal conductivity, so it is widely used in cutting tools, grinding tools, turning tools, milling cutters, drill bits and other fields.

In practical applications, PCD material has become one of the indispensable materials in modern manufacturing. It has important application value in aerospace, automobile manufacturing, mechanical processing and other fields. For example, PCD tools can be used to process difficult-to-process materials such as aluminum alloys, copper alloys, and fiber-reinforced composite materials, with high cutting efficiency and surface quality. In addition, PCD grinding tools are also widely used in precision grinding, ultra-precision machining and other fields, providing efficient and accurate processing solutions for workpiece processing.

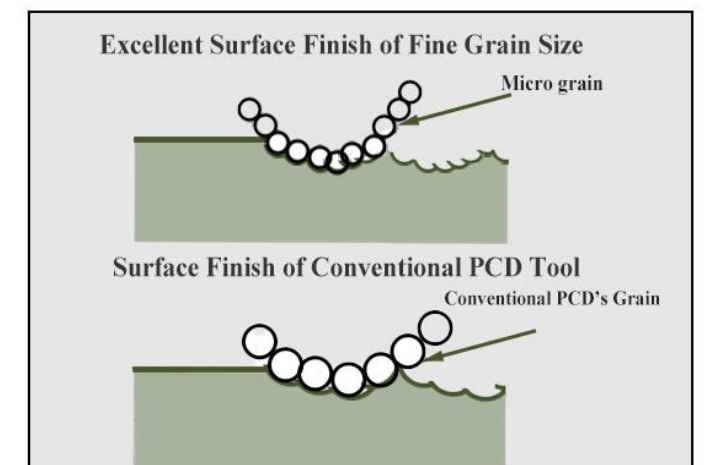
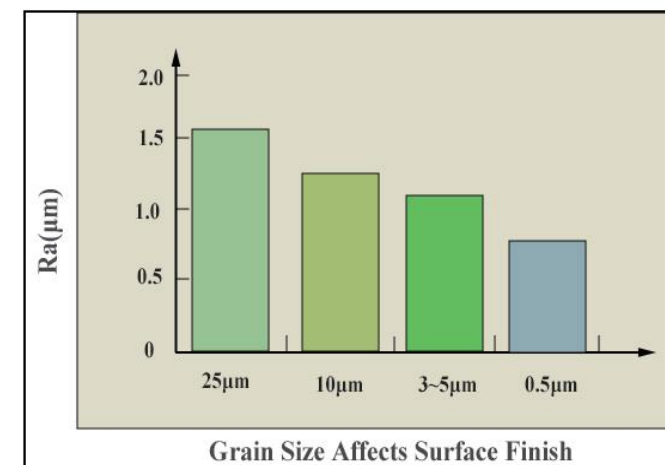
MICROSTRUCTURE OF PCD MATERIALS



DIFFERENCES IN WEAR-RESISTANCE AMONG VARIOUS PCD MATERIALS



INFLUENCES OF PCD GRAIN SIZE ON WORK-PIECE FINISH



APPLICATION OF PCD TOOLS

DIFFERENT APPLICATION AREAS OF COMMON MATERIALS

Material Classification	Materials	Application Industry
Non-ferrous metals	Aluminum, aluminum alloy, aluminum casting alloy, magnesium aluminum alloy, silicon aluminum alloy	a. Aerospace industry b. Auto parts, such as pistons, wheels, etc. c. 3C industry, mobile phones, watches, etc.
	Copper, brass, gold	Jewelry
	Tungsten carbide	Mill rolls
Non-metallic materials	Composite materials, carbon fiber, glass fiber	Aerospace field
	Graphite	Electrode materials
	Wood	Wooden door carvings
	Stone	Marble, granite, ect.
	Polyurethane	Sealing components for mechanical equipment
	Acrylic	Advertising boards

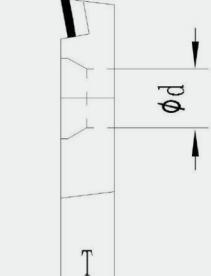
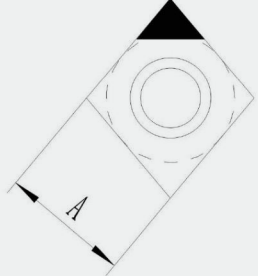
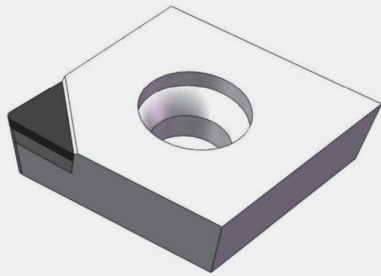
RECOMMENDED PCD PROCESSING PARAMETERS FOR DIFFERENT MATERIALS

Machining Materials		Machine Mode	Cutting Speed / Vc(m/min)	Feed Rate Fr (mm/r)	Depth of Cut ap (mm)
Aluminum Alloy	4~8% Si	Turning	900~3500	0.1~0.4	0.1~4.0
		Milling	1000~5000	0.1~0.3	0.1~0.3
	9~14% Si	Turning	600~2400	0.1~0.4	0.1~4.0
		Milling	700~3000	0.1~0.3	0.1~0.3
	> 13% Si	Turning	300~700	0.1~0.4	0.1~4.0
		Milling	400~900	0.1~0.3	0.1~0.3
Metal Matrix Composites	Al/ 10~20% SiC	Turning/Milling	300~600	0.1~0.4	0.2~1.5
Copper Alloy	Copper, Copper Alloy	Turning/Milling	400~1200	0.03~0.3	0.05~2.0
Carbide Alloy (Co≤16%)	Unsintered	Turning	60~120	0.1~0.4	0.1~1.0
	Sintering	Turning	20~40	0.1~0.25	0.1~0.5
Ceramic	Unsintered	Turning	70~150	0.1~0.4	0.2~1.0
	Sintering	Turning	50~80	0.1~0.25	0.1~0.5
Rubber/ Fiber Materials	Carbon/ Graphite	Turning/Milling	300~2000	0.05~0.3	0.1~3.0
	Glass Fiber/ Rubber	Turning/Milling	200~1000	0.05~0.5	0.1~3.0
	Glass Fiber/ Graphite	Turning/Milling	300~1000	0.1~0.4	0.1~3.0

PCD TOOLS
DETAIL INFORMATION

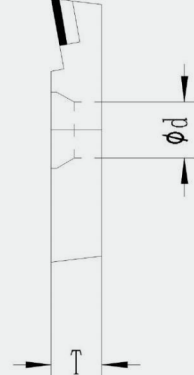
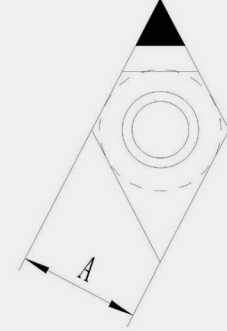
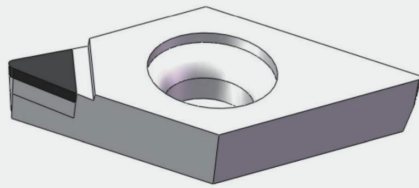
PART 01 PCD TURNING TOOLS

CCGT/CNGA80°Diamond Shape PCD Inserts

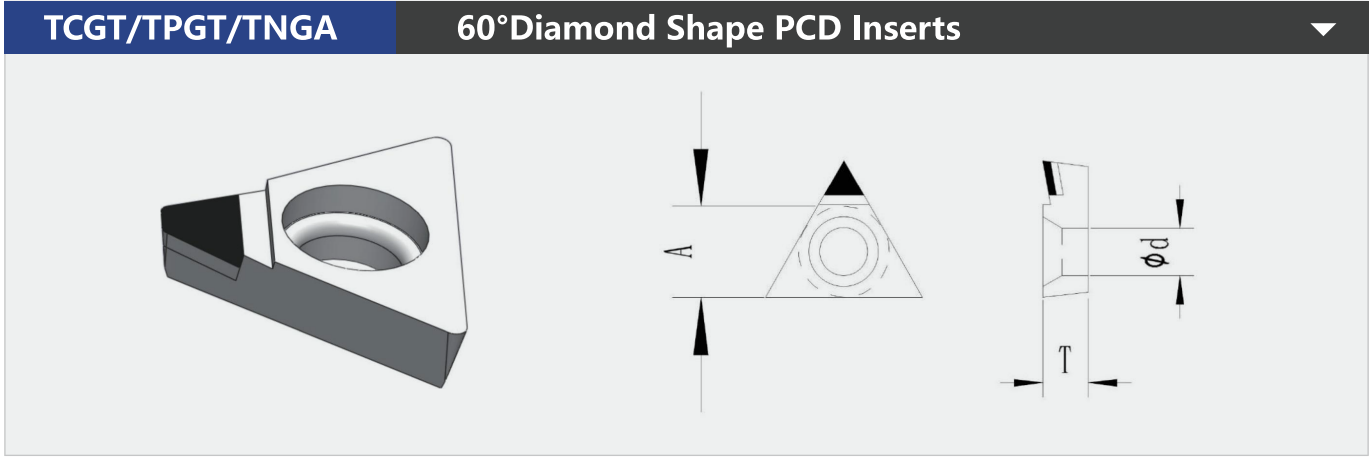


ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /Φd	Thickness /T
CCGT030101	CCGT(-)1(0.2)	0.1	3.5	1.9	1.4
CCGT030102	CCGT(-)1(0.5)	0.2	3.5	1.9	1.4
CCGT040102	CCGT(1.5)1(0.5)	0.2	4.3	2.3	1.8
CCGT040104	CCGT(1.5)1(1)	0.4	4.3	2.3	1.8
CCGT060202	CCGT(2)1.5(0.5)	0.2	6.35	2.8	2.38
CCGT060204	CCGT(2)1.5(1)	0.4	6.35	2.8	2.38
CCGT09T302	CCGT(3)2.5(0.5)	0.2	9.525	4.4	3.97
CCGT09T304	CCGT(3)2.5(1)	0.4	9.525	4.4	3.97
CCGT09T308	CCGT(3)2.5(2)	0.8	9.525	4.4	3.97
CCGT120402	CCGT43(0.5)	0.2	12.7	5.5	4.76
CCGT120404	CCGT431	0.4	12.7	5.5	4.76
CCGT120408	CCGT432	0.8	12.7	5.5	4.76
CCGT120412	CCGT433	1.2	12.7	5.5	4.76
CNGA120402	CNGA43(0.5)	0.2	12.7	5.16	4.76
CNGA120404	CNGA431	0.4	12.7	5.16	4.76
CNGA120408	CNGA432	0.8	12.7	5.16	4.76
CNGA120412	CNGA433	1.2	12.7	5.16	4.76

DCGT/DNGA55°Diamond Shape PCD Inserts

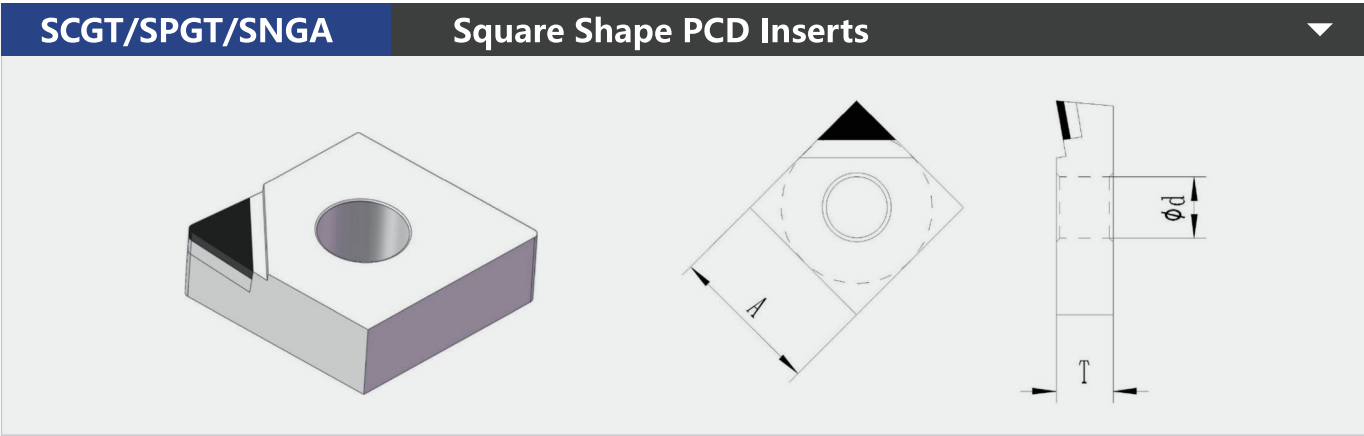


ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /Φd	Thickness /T
DCGT070201	DCGT2(1.5)(0.2)	0.1	6.35	2.8	2.38
DCGT070202	DCGT2(1.5)(0.5)	0.2	6.35	2.8	2.38
DCGT070204	DCGT2(1.5)1	0.4	6.35	2.8	2.38
DCGT070208	DCGT2(1.5)2	0.8	6.35	2.8	2.38
DCGT110302	DCGT32(0.5)	0.2	9.525	4.4	3.18
DCGT110304	DCGT321	0.4	9.525	4.4	3.18
DCGT11T301	DCGT3(2.5)(0.2)	0.1	9.525	4.4	3.97
DCGT11T302	DCGT3(2.5)(0.5)	0.2	9.525	4.4	3.97
DCGT11T304	DCGT3(2.5)1	0.4	9.525	4.4	3.97
DCGT11T308	DCGT3(2.5)2	0.8	9.525	4.4	3.97
DNGA110402	DNGA33(0.5)	0.2	9.525	3.81	4.76
DNGA110404	DNGA331	0.4	9.525	3.81	4.76
DNGA150402	DNGA43(0.5)	0.2	12.7	5.16	4.76
DNGA150404	DNGA431	0.4	12.7	5.16	4.76
DNGA150408	DNGA432	0.8	12.7	5.16	4.76
DNGA150412	DNGA433	1.2	12.7	5.16	4.76
DNGA150602	DNGA43(0.5)	0.2	12.7	5.16	6.35
DNGA150604	DNGA441	0.4	12.7	5.16	6.35
DNGA150608	DNGA442	0.8	12.7	5.16	6.35
DNGA150612	DNGA443	1.2	12.7	5.16	6.35

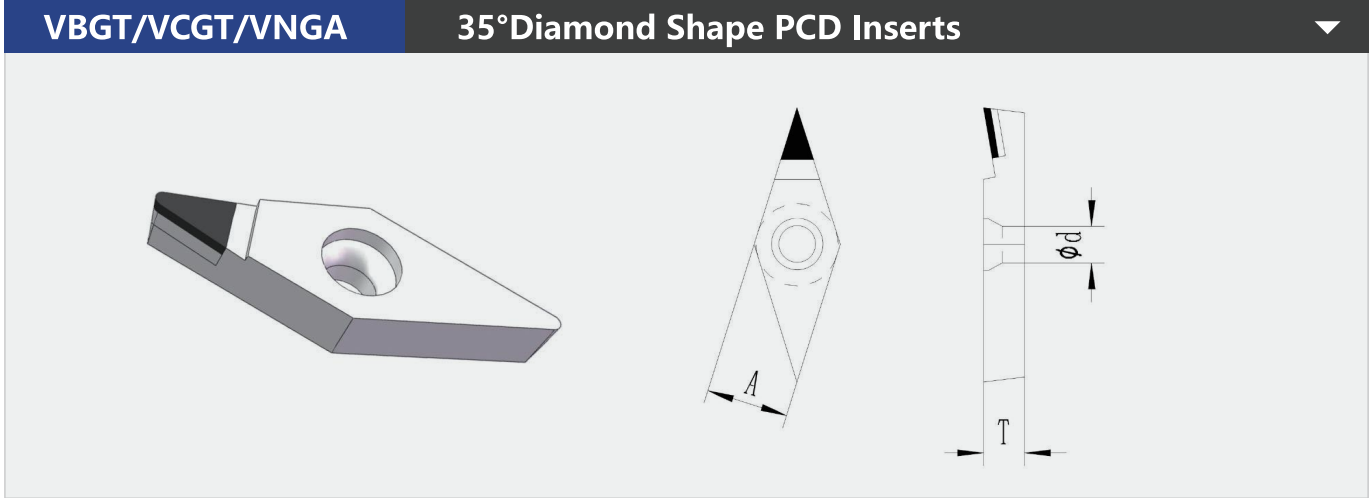


ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /φd	Thickness /T
TCGT060102	TCGT(1.2)1(0.5)	0.2	3.97	2.3	1.59
TCGT060104	TCGT(1.2)11	0.4	3.97	2.3	1.59
TCGT080202	TCGT(1.5)(1.5)(0.5)	0.2	4.76	2.3	2.38
TCGT080204	TCGT(1.5)(1.5)1	0.4	4.76	2.3	2.38
TCGT090202	TCGT(1.8)(1.5)(0.5)	0.2	5.56	2.5	2.38
TCGT090204	TCGT(1.8)(1.5)1	0.4	5.56	2.5	2.38
TCGT110202	TCGT2(1.5)(0.5)	0.2	6.35	2.8	2.38
TCGT110204	TCGT2(1.5)1	0.4	6.35	2.8	2.38
TCGT110302	TCGT22(0.5)	0.2	6.35	2.8	3.18
TCGT110304	TCGT221	0.4	6.35	2.8	3.18
TCGT16T302	TCGT3(2.5)(0.5)	0.2	9.525	4.4	3.97
TCGT16T304	TCGT3(2.5)1	0.4	9.525	4.4	3.97
TPGT080202	TPGT(1.5)(1.5)(0.5)	0.2	4.76	2.3	2.38
TPGT080204	TPGT(1.5)(1.5)1	0.4	4.76	2.3	2.38
TPGT090202	TPGT(1.8)(1.5)(0.5)	0.2	5.56	2.5	2.38
TPGT090204	TPGT(1.8)(1.5)1	0.4	5.56	2.5	2.38
TPGT090208	TPGT(1.8)(1.5)2	0.8	5.56	2.5	2.38
TPGT110202	TPGT2(1.5)(0.5)	0.2	6.35	2.8	2.38
TPGT110204	TPGT2(1.5)1	0.4	6.35	2.8	2.38
TPGT110208	TPGT2(1.5)2	0.8	6.35	2.8	2.38
TPGT110304	TPGT221	0.4	6.35	2.8	3.18
TPGT110308	TPGT222	0.8	6.35	2.8	3.18

TPGT160302	TPGT32(0.5)	0.2	9.525	4.4	3.18
TPGT160304	TPGT321	0.4	9.525	4.4	3.18
TPGT160308	TPGT322	0.8	9.525	4.4	3.18
TPGT160402	TPGT33(0.5)	0.2	9.525	4.4	4.76
TNGA160402	TNGA33(0.5)	0.2	9.525	3.81	4.76
TNGA160404	TNGA331	0.4	9.525	3.81	4.76

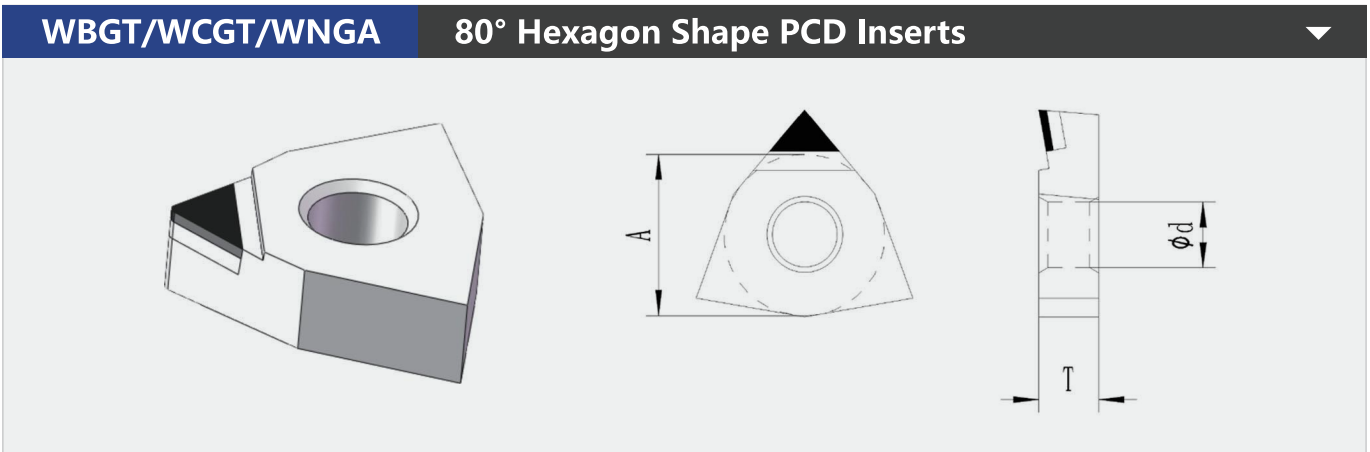


ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /φd	Thickness /T
SCGT09T302	SCGT3(2.5)(0.5)	0.2	9.525	4.5	3.97
SCGT09T304	SCGT3(2.5)1	0.4	9.525	4.5	3.97
SCGT09T308	SCGT3(2.5)2	0.8	9.525	4.5	3.97
SPGT060302	SPGT22(0.5)	0.2	6.35	2.8	3.18
SPGT060304	SPGT221	0.4	6.35	2.8	3.18
SPGT090302	SPGT32(0.5)	0.2	9.525	4.5	3.18
SPGT090304	SPGT321	0.4	9.525	4.5	3.18
SPGT090308	SPGT322	0.8	9.525	4.5	3.18
SPGT120402	SPGT43(0.5)	0.2	12.7	5.5	4.76
SPGT120404	SPGT431	0.4	12.7	5.5	4.76
SPGT120408	SPGT432	0.8	12.7	5.5	4.76
SNGA120402	SNGA43(0.5)	0.2	12.7	5.16	4.76
SNGA120404	SNGA431	0.4	12.7	5.16	4.76
SNGA120408	SNGA432	0.8	12.7	5.16	4.76



ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /φd	Thickness /T
VBGT110302	VBGT22(0.5)	0.2	6.35	2.8	3.18
VBGT110304	VBGT221	0.4	6.35	2.8	3.18
VBGT110308	VBGT222	0.8	6.35	2.8	3.18
VBGT160402	VBGT33(0.5)	0.2	9.525	4.4	4.76
VBGT160404	VBGT331	0.4	9.525	4.4	4.76
VBGT160408	VBGT332	0.8	9.525	4.4	4.76
VBGT160412	VBGT333	1.2	9.525	4.4	4.76
VC GT070201	VC GT(1.2)(1.5)(0.2)	0.1	3.97	2.3	2.38
VC GT070202	VC GT(1.2)(1.5)(0.5)	0.2	3.97	2.3	2.38
VC GT080202	VC GT(1.5)(1.5)(0.5)	0.2	4.76	2.3	2.38
VC GT080204	VC GT(1.5)(1.5)1	0.4	4.76	2.3	2.38
VC GT110302	VC GT22(0.5)	0.2	6.35	2.8	3.18
VC GT110304	VC GT221	0.4	6.35	2.8	3.18
VC GT160402	VC GT33(0.5)	0.2	9.525	4.4	4.76
VC GT160404	VC GT331	0.4	9.525	4.4	4.76
VC GT160408	VC GT332	0.8	9.525	4.4	4.76
VC GT160412	VC GT333	1.2	9.525	4.4	4.76
VNGA160402	VNGA33(0.5)	0.2	9.525	3.81	4.76

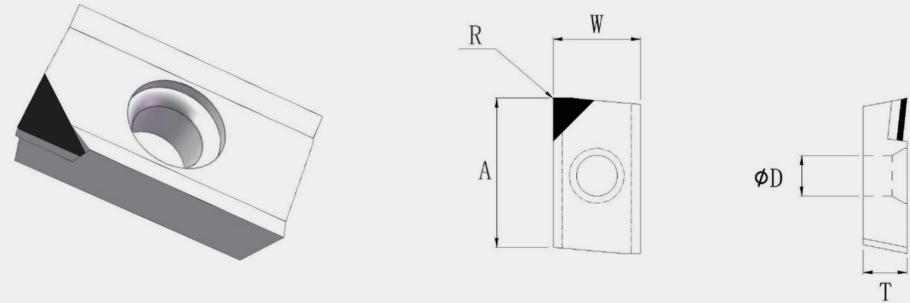
VNGA160404	VNGA331	0.4	9.525	3.81	4.76
VNGA160408	VNGA332	0.8	9.525	3.81	4.76
VNGA160412	VNGA333	1.2	9.525	3.81	4.76



ISO Model	ANSI Model	Radius	Inscribed circle diameter(A)	Hole diameter /φd	Thickness /T
WBGT060102	WBGT(1.2)1(0.5)	0.2	3.97	2.3	1.59
WBGT060104	WBGT(1.2)11	0.4	3.97	2.3	1.59
WBGT080202	WBGT(1.5)(1.5)(0.5)	0.2	4.76	2.3	2.38
WBGT080204	WBGT(1.5)(1.5)1	0.4	4.76	2.3	2.38
WC GT020101	WC GT(1.2)1(0.2)	0.1	3.97	2.3	1.59
WC GT020102	WC GT(1.2)1(0.5)	0.2	3.97	2.3	1.59
WC GT040202	WC GT2(1.5)(0.5)	0.2	6.35	2.8	2.38
WC GT040204	WC GT2(1.5)1	0.4	6.35	2.8	2.38
WC GT06T302	WC GT3(2.5)(0.5)	0.2	9.525	4.4	3.97
WC GT06T304	WC GT3(2.5)1	0.4	9.525	4.4	3.97
WNGA080402	WNGA43(0.5)	0.2	12.7	5.16	4.76
WNGA080404	WNGA431	0.4	12.7	5.16	4.76
WNGA080408	WNGA432	0.8	12.7	5.16	4.76
WNGA080412	WNGA433	1.2	12.7	5.16	4.76

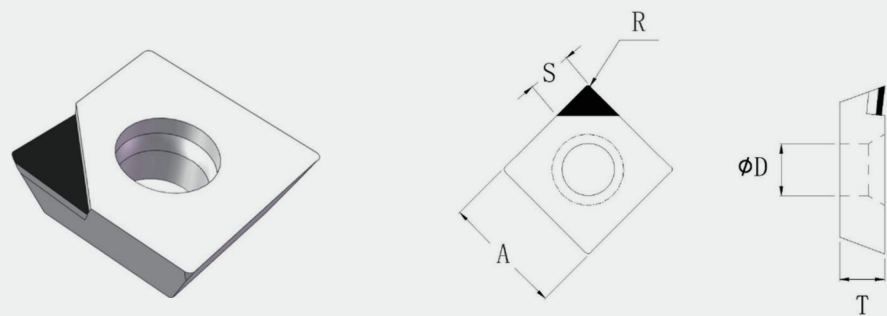
PART 02 PCD MILLING INSERTS

APKT PCD Milling Inserts



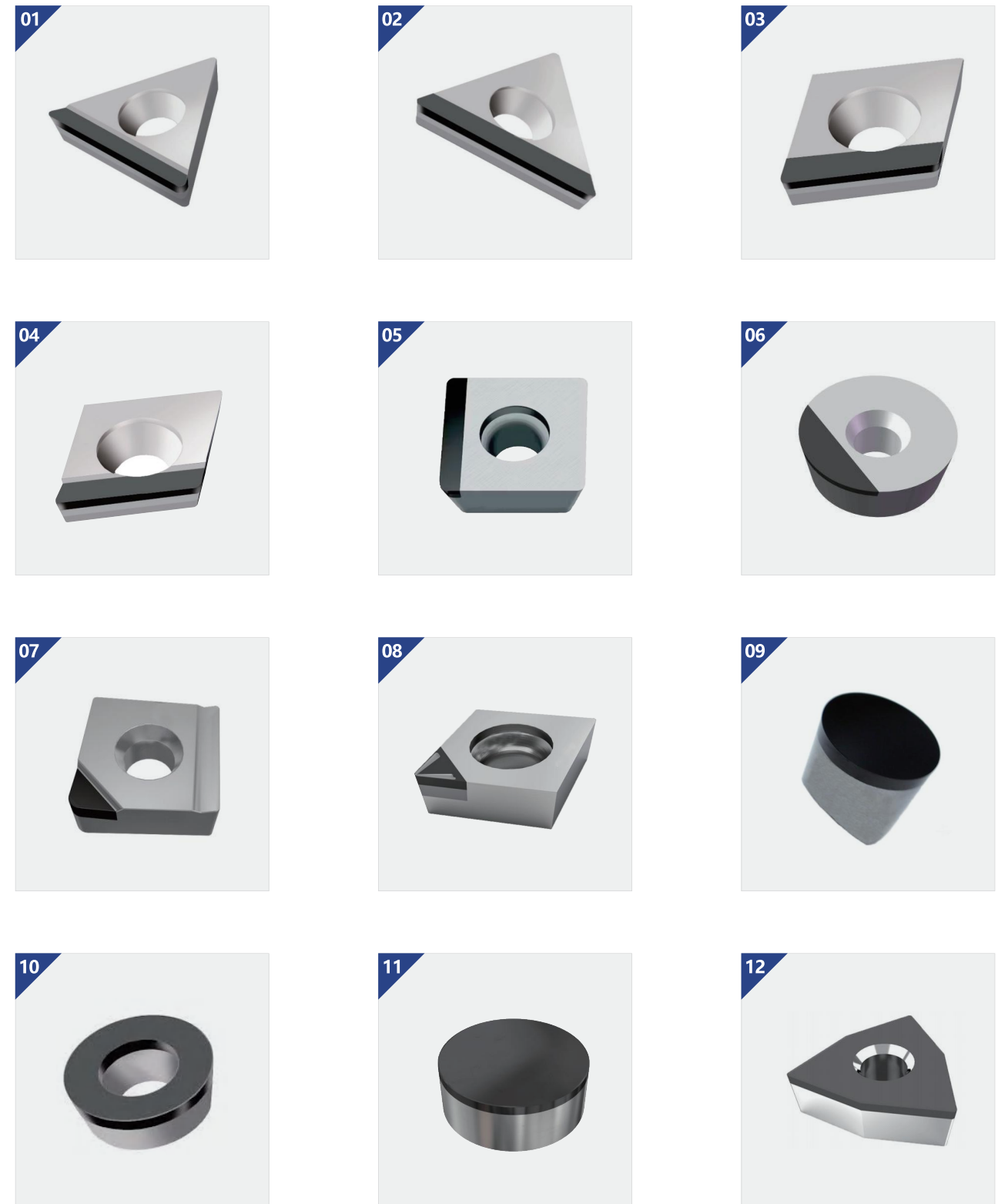
ISO Model	Length/A	Width/W	Thickness/T	Hole diameter/φd	Radius/R
APKT113502	11	6.35	3.5	2.8	0.2
APKT113504					0.4
APKT113508					0.8
APKT113520					2
APKT160402	16.5	9.525	4.76	4.4	0.2
APKT160404					0.4
APKT160408					0.8
APKT160420					2

SEHT PCD Milling Inserts



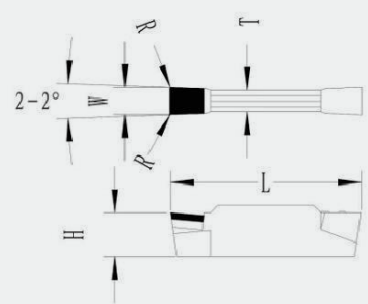
ISO Model	Length/A	Hole diameter/φd	Thickness/T	Tip Length/S	Radius/R
SEHT120402	12.7	5.5	4.76	4.2	0.2
SEHT120404				4	0.4
SEHT120408				3.8	0.8
SEHT120415				3.5	1.5

PART 03 OTHER CUSTOMIZED PCD INSERTS



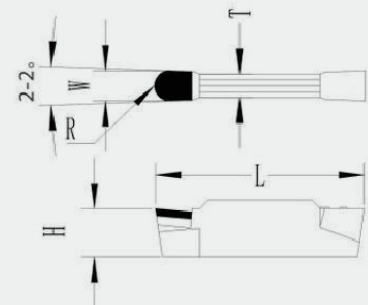
PART 04 PCD GROOVING INSERTS

MGMN PCD Grooving Inserts



Model	Width/W	Thickness/T	Length/L	Height/H	Radius/R
MGMN150	1.5	1.2	16	3.5	0.2
MGMN200	2.0	1.6	16	3.5	0.2
MGMN250	2.5	2.0	18.3	3.65	0.2
MGMN300	3.0	2.35	21	4.8	0.2
MGMN400	4.0	3.3	21	4.8	0.2
MGMN500	5.0	4.1	26	5.8	0.2

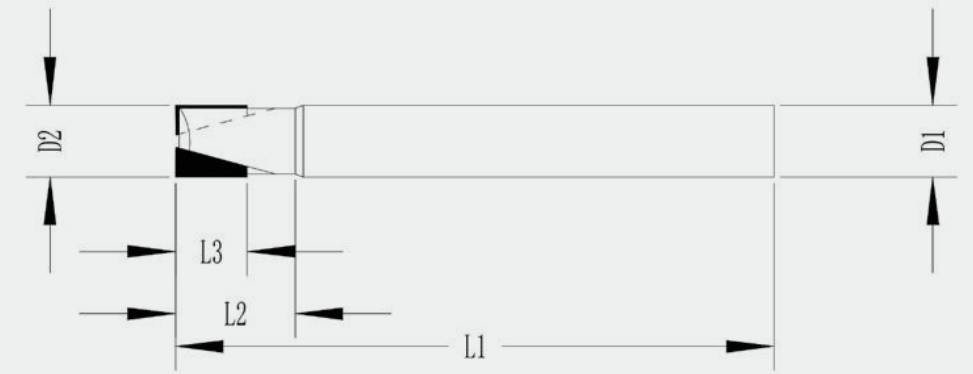
MRMN PCD Grooving Inserts



Model	Width/W	Thickness/T	Length/L	Height/H	Radius/R
MRMN150	1.5	1.2	16	3.5	0.75
MRMN200	2.0	1.6	16	3.5	1
MRMN250	2.5	2.0	18.3	3.65	1.25
MRMN300	3.0	2.35	21	4.8	1.5
MRMN400	4.0	3.3	21	4.8	2
MRMN500	5.0	4.1	26	5.8	2.5

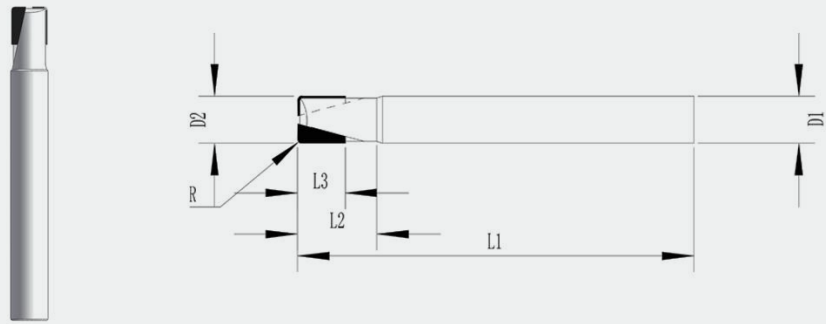
PART 05 PCD END MILLS

Flat PCD End Mills



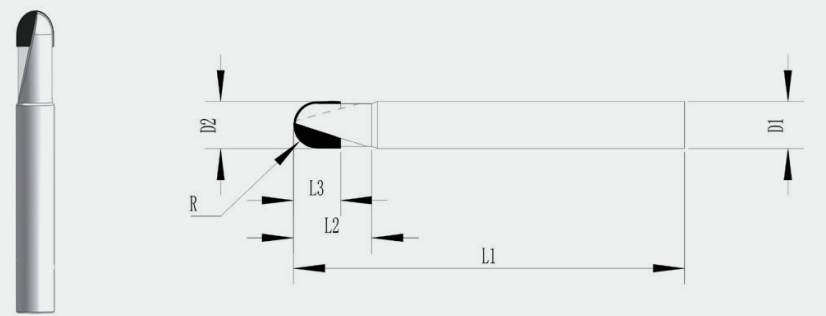
ISO Model	PCD Tips Diameter/ D2	PCD Tips Length/ L3	L2	Shank Diameter/ D1	Total Length/ L1	Tip No.s F
Φ0.5*2H*2.5*Φ4*50L*1F	0.5	2	2.5	4	50	1
Φ0.8*3H*3.5*Φ4*50L*1F	0.8	3	3.5	4	50	1
Φ1*3H*4*Φ4*50L*1F	1	3	4	4/6	50	1
Φ1.5*4H*5*Φ4*50L*1F	1.5	4	5	4/6	50	1
Φ2*6H*7*Φ4*50L*1F	2	6	7	4/6	50	1
Φ2.5*6H*7*Φ6*50L*1F	2.5	6	7	4/6	50	1
Φ3*6H*7*Φ6*50L*1F/2F	3	6	7	4/6	50	1/2
Φ4*6H*8*Φ4*50L*1F/2F	4	6	8	4/6	50	1/2
Φ5*6H*8*Φ6*50L*1F/2F	5	6	8	5/6	50	1/2
Φ6*6H*10*Φ6*50L*1F/2F	6	6	10	6	50	1/2
Φ8*6H*10*Φ8*75L*1F/2F	8	6	10	8	75	1/2
Φ10*6H*15*Φ10*75L*1F/2F	10	6/8	15	10	75	1/2

Round Nose PCD End Mill



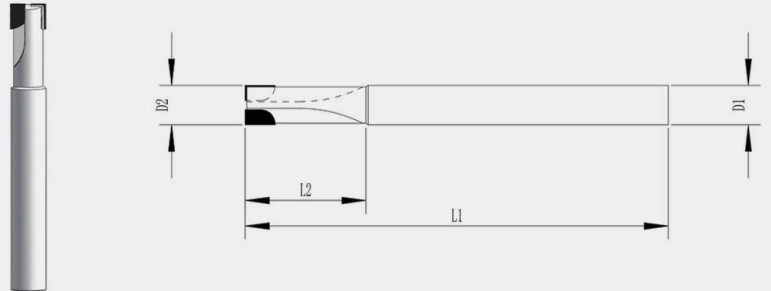
Model	PCD Tips Diameter/D2	PCD Radius/R	PCD Length/L3	L2	Shank Diameter/D1	Total Length/L1	Tip No.s F
φ1*R0.2*3H*4*D4*50*1F	1	0.2	3	4	4	50	1
φ2*R0.3*6H*7*D4*50*1F	2	0.3	6	7	4/6	50	1
φ3*R0.3*6H*8*D4*50*1F/2F	3	0.3	6	8	4/6	50	1/2
φ4*R0.3*6H*8*D4*50*1F/2F	4	0.3	6	8	4/6	50	1/2
φ6*R0.5*6H*10*D6*50*1F/2F	6	0.5	6	10	6	50	1/2
φ8*R0.5*6H*10*D8*75*1F/2F	8	0.5	6	10	8	75	1/2
φ10*R0.5*6H*15*D10*75*1F/2F	10	0.5	6	15	10	75	1/2

Ball Nose PCD End Mill



Model	PCD Tips Diameter/D2	PCD Radius/R	PCD Length/L3	L2	Shank Diameter/D1	Total Length/L1	Tip No.s F
R0.5*3H*4*D4*50*1F	1	0.5	3	4	4	50	1
R1*6H*7*D4*50*1F	2	1	6	7	4	50	1
R1.5*6H*7*D4*50*1F	3	1.5	6	7	4/6	50	1
R2*6H*8*D4*50*1F/2F	4	2	6	8	4/6	50	1/2
R3*6H*10*D6*50*1F/2F	6	3	6	10	6	50	1/2
R4*6H*10*D8*75*1F/2F	8	4	6	10	8	75	1/2
R5*8H*15*D10*75*1F/2F	10	5	8	15	10	75	1/2
R6*8H*15*D12*75*1F/2F	12	6	8	15	12	75	1/2

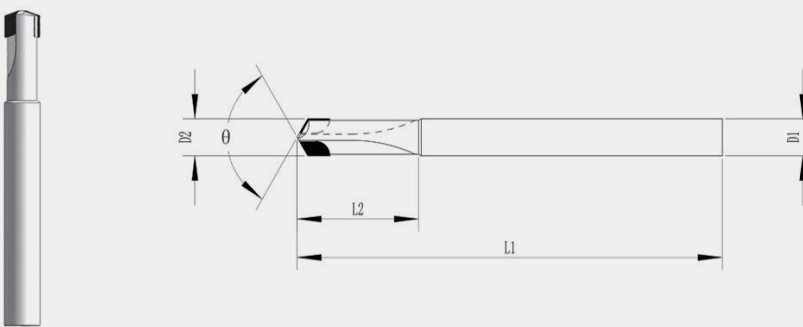
PCD Reamers



Model	PCD Tips Diameter/D2	L2	Total Length/L1	Tip No.s F	Shank Diameter/D1
D6*20*100*2F	6	20	100	2	6
D8*20*100*2F	8	20	100	2	8
D10*30*100*2F	10	30	100	2	10
D12*30*100*2F	12	30	100	2	12
D16*30*100*2F	16	30	100	2	16
D20*30*100*2F	20	30	100	2	20

PART 06 PCD Drill Reamers

PCD Drill Reamers

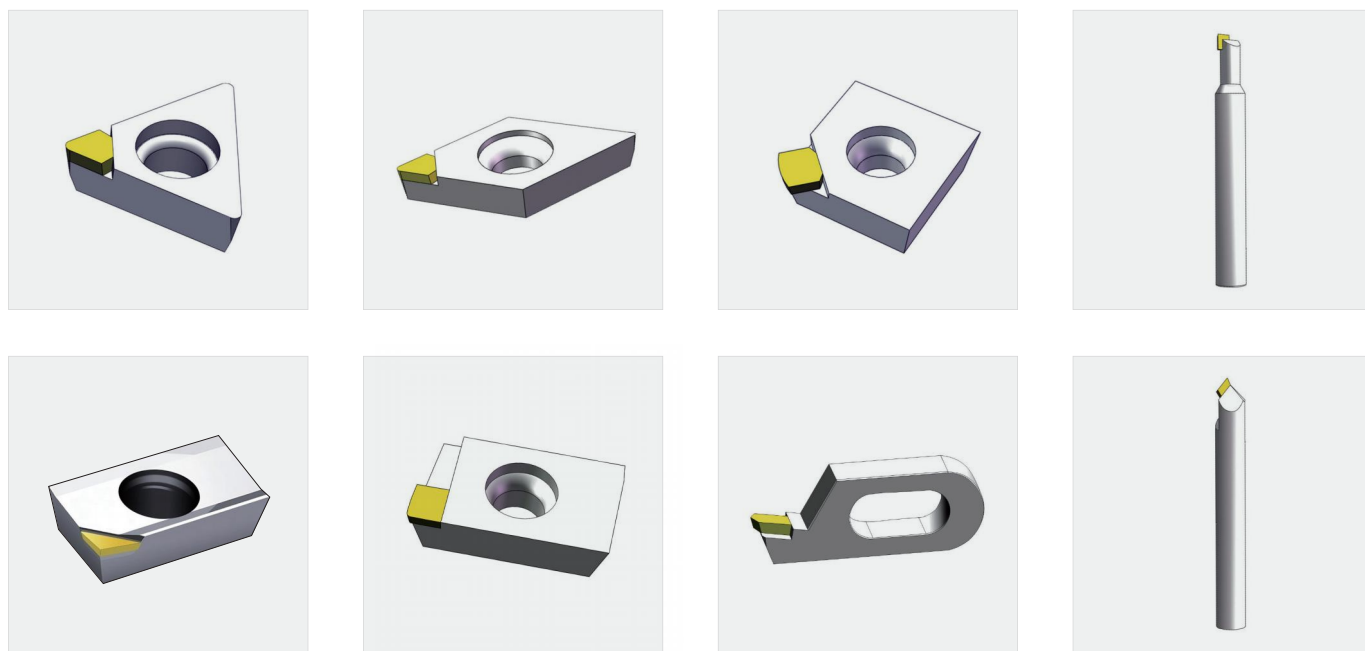


Model	PCD Tips Diameter/D2	L2	Total Length/L1	Tip No.s F	Shank Diameter/D1	Angle/θ
D6*20*100*2F	6	20	100	2	6	130°
D8*20*100*2F	8	20	100	2	8	130°
D10*30*100*2F	10	30	100	2	10	130°
D12*30*100*2F	12	30	100	2	12	130°
D16*30*100*2F	16	30	100	2	16	130°
D20*30*100*2F	20	30	100	2	20	130°

PART 07 MONOCRYSTALLINE DIAMOND TOOLS SERIES

In ultra-precision machining, the main factors to ensure the quality of the machining surface are not only high-precision machine tools and ultra-stable machining environment, but also high-quality tools. Natural diamond has high hardness, good wear resistance, high strength, good thermal conductivity, low friction coefficient with non-ferrous metals, good anti-adhesion, excellent corrosion resistance and chemical stability. It can grind extremely sharp tips and is considered to be an ideal tool material for ultra-precision cutting. It plays an important role in the field of mechanical machining, especially ultra-precision machining, and is widely used.

MONOCRYSTALLINE TOOLS WE CAN PROVIDE



TYPICAL INDUSTRY PCD TOOLS



OTHER CUSTOMIZED PCD TOOLS

