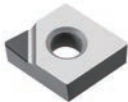


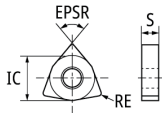
CN.. series/Inserts PCD / Diamond Coating

CNM.

							Steel					
							Stainless Steel					
							Cast Iron					
							Non-Ferrous Material		●	●	●	
							Heat Resistant Alloy					
							Hardened Material					
							Others (non-metallic)					●
Shape	Item Number (ISO)	CECC	EPSR °	IC mm	S mm	AN °	RE mm	No. of edge	PCD		Diamond Coating UC1	
	CNMG120404FNZP	Up-sharp edge	80	12.7	4.76	–	0.4	4			●	
	CNMG120408FNZP	Up-sharp edge	80	12.7	4.76	–	0.8	4			●	
	CNMX120404PF	Up-sharp edge	80	12.7	4.76	–	0.4	1		●		
	CNMX120408PF	Up-sharp edge	80	12.7	4.76	–	0.8	1		●		

WN.. series/Inserts BIDE MICS / Ceramics / NTK CeramiX

WNGA



Steel

Stainless Steel

Cast Iron

Non-Ferrous Material

Heat Resistant Alloy

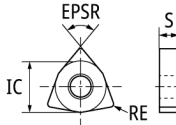
Hardened Material

Others (non-metallic)

Shape	Item Number	CECC	EPSR	IC	S	AN	RE	D1	D2	INSL	S1	W1	BIDEMICS				NTK CeramiX	Alumina Ceramics							Silicon Nitride Ceramics				Whisker Ceramics			
													120 PVD	JP2 PVD	JX1	JX3		HC1	HW2	HC2	HC4	HC6	HC7	ZC7	SX3	SX5	SX7	SX9	SX6	SP9	WA1	WA5
			(ISO)	°	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	WNGA080408T00520	T00520	80	12.7	4.76	-	0.8	-	-	-	-	-																				
	WNGA080408T01020	T01020	80	12.7	4.76	-	0.8	-	-	-	-	-																				
	WNGA080408T02020	T02020	80	12.7	4.76	-	0.8	-	-	-	-	-																				
	WNGA080412T00520	T00520	80	12.7	4.76	-	1.2	-	-	-	-	-																				
	WNGA080412T01020	T01020	80	12.7	4.76	-	1.2	-	-	-	-	-																				
	WNGA080412T02020	T02020	80	12.7	4.76	-	1.2	-	-	-	-	-																				
	WNGA080416T02020	T02020	80	12.7	4.76	-	1.6	-	-	-	-	-																				

WN.. series/Inserts Carbide

WN..



Steel

Stainless Steel

Cast Iron

Non-Ferrous Material

Heat Resistant Alloy

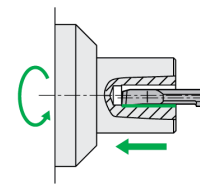
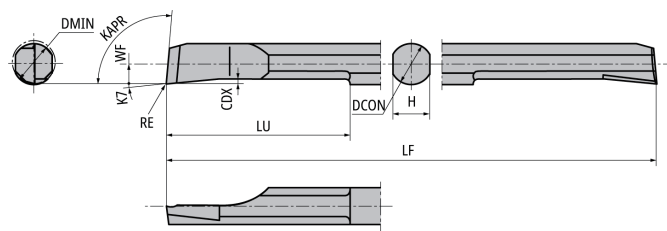
Hardened Material

Others (non-metallic)

Shape	Item Number	CECC	EPSR	IC	S	AN	RE	BS	Carbide										CVD	CVD	Uncoated
									PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD			
			(ISO)	°	mm	mm	°	mm	mm	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1		
	WNGG080404FNUL	Up-sharp edge	80	12.7	4.76	-	0.4	-													
	WNGG080408FNUL	Up-sharp edge	80	12.7	4.76	-	0.8	-													
	WNGG080404FNZP	Up-sharp edge	80	12.7	4.76	-	0.4	-													
	WNGG080408FNZP	Up-sharp edge	80	12.7	4.76	-	0.8	-													
	WNMG080408T00525Z5	T00525	80	12.7	4.76	-	0.8	-													
	WNMG080412T00525Z5	T00525	80	12.7	4.76	-	1.2	-													
	WNMG080408G	-	80	12.7	4.76	-	0.8	-													
	WNMG080412G	-	80	12.7	4.76	-	1.2	-													

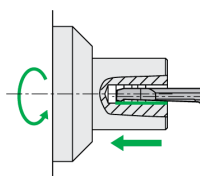
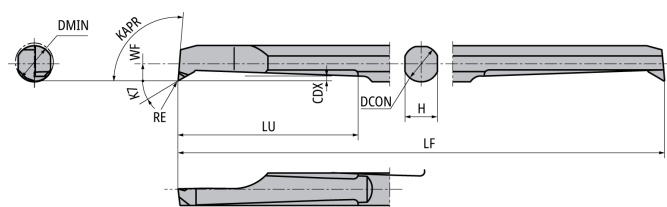
SHF.. series/Insert bar Carbide

SHFS-S Sharp cutting edge



Item Number	Hand	Chip-breaker	DMIN	CDX	DCON	H	K7	KAPR	LF	LU	RE	WF	Carbide PVD
			mm	mm	mm	mm	°	°					TM4
SHFS020R005S	R	Yes	2.2	0.25	2	1.8	5	95	50	10	0.05	0.9	●
SHFS025R005S	R	Yes	2.7	0.3	2.5	2.3	5	95	50	12.5	0.05	1.15	●
SHFS025R015S	R	Yes	2.7	0.3	2.5	2.3	5	95	50	12.5	0.15	1.15	●
SHFS030R005S	R	Yes	3.2	0.4	3	2.7	5	95	50	15	0.05	1.4	●
SHFS030R015S	R	Yes	3.2	0.4	3	2.7	5	95	50	15	0.15	1.4	●
SHFS035R005S	R	Yes	3.7	0.4	3.5	3.2	5	95	60	17.5	0.05	1.65	●
SHFS035R015S	R	Yes	3.7	0.4	3.5	3.2	5	95	60	17.5	0.15	1.65	●
SHFS040R005S	R	Yes	4.2	0.45	4	3.6	5	95	60	20	0.05	1.9	●
SHFS040R015S	R	Yes	4.2	0.45	4	3.6	5	95	60	20	0.15	1.9	●
SHFS050R005S	R	Yes	5.2	0.5	5	4.5	5	95	70	25	0.05	2.4	●
SHFS050R015S	R	Yes	5.2	0.5	5	4.5	5	95	70	25	0.15	2.4	●

SHFB-F Evacuates chips BACKWARD

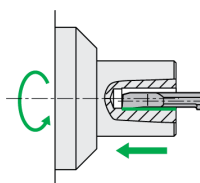
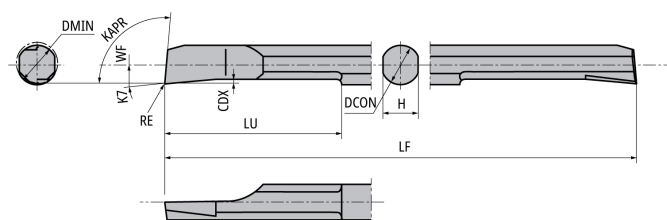


Item Number	Hand	Chip-breaker	DMIN	CDX	DCON	H	K7	KAPR	LF	LU	RE	WF	Carbide PVD
			mm	mm	mm	mm	°	°					TM4
SHFB020R005F	R	Yes	2.2	0.25	2	1.8	30	95	50	8	0.05	0.95	●
SHFB025R005F	R	Yes	2.7	0.3	2.5	2.3	30	95	50	12.5	0.05	1.2	●
SHFB025R015F	R	Yes	2.7	0.3	2.5	2.3	30	95	50	12.5	0.15	1.2	●
SHFB030R005F	R	Yes	3.2	0.45	3	2.7	30	95	50	15	0.05	1.4	●
SHFB030R015F	R	Yes	3.2	0.45	3	2.7	30	95	50	15	0.15	1.4	●
SHFB035R005F	R	Yes	3.7	0.5	3.5	3.2	30	95	60	17.5	0.05	1.65	●
SHFB035R015F	R	Yes	3.7	0.5	3.5	3.2	30	95	60	17.5	0.15	1.65	●
SHFB040R005F	R	Yes	4.2	0.5	4	3.6	30	95	60	20	0.05	1.9	●
SHFB040R015F	R	Yes	4.2	0.5	4	3.6	30	95	60	20	0.15	1.9	●
SHFB050R005F	R	Yes	5.2	0.7	5	4.5	30	95	70	25	0.05	2.4	●
SHFB050R015F	R	Yes	5.2	0.7	5	4.5	30	95	70	25	0.15	2.4	●

ID Tooling

V

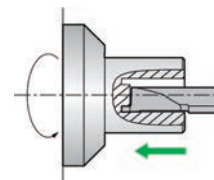
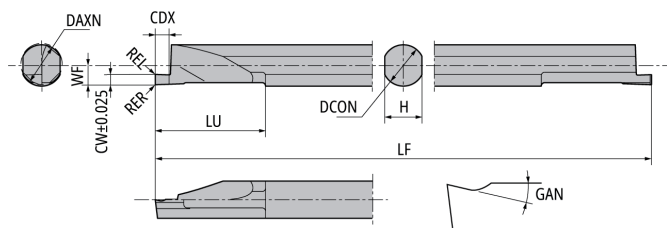
SHFS-H Mirror finish edge



Item Number	Hand	Chip-breaker	DMIN	CDX	DCON	H	K7	KAPR	LF	LU	RE	WF	Carbide PVD
			mm	mm	mm	mm	°	°					TM4
SHFS020R005H	M R	Yes	2.2	0.25	2	1.8	5	95	50	10	0.05	0.9	●
SHFS025R005H	M R	Yes	2.7	0.3	2.5	2.3	5	95	50	12.5	0.05	1.15	●
SHFS025R015H	M R	Yes	2.7	0.3	2.5	2.3	5	95	50	12.5	0.15	1.15	●
SHFS030R005H	M R	Yes	3.2	0.4	3	2.7	5	95	50	15	0.05	1.4	●
SHFS030R015H	M R	Yes	3.2	0.4	3	2.7	5	95	50	15	0.15	1.4	●
SHFS035R005H	M R	Yes	3.7	0.4	3.5	3.2	5	95	60	17.5	0.05	1.65	●
SHFS035R015H	M R	Yes	3.7	0.4	3.5	3.2	5	95	60	17.5	0.15	1.65	●
SHFS040R005H	M R	Yes	4.2	0.45	4	3.6	5	95	60	20	0.05	1.9	●
SHFS040R015H	M R	Yes	4.2	0.45	4	3.6	5	95	60	20	0.15	1.9	●
SHFS050R005H	M R	Yes	5.2	0.5	5	4.5	5	95	70	25	0.05	2.4	●
SHFS050R015H	M R	Yes	5.2	0.5	5	4.5	5	95	70	25	0.15	2.4	●

SB.. series/Insert bar Carbide for ID Face Grooving

SFG

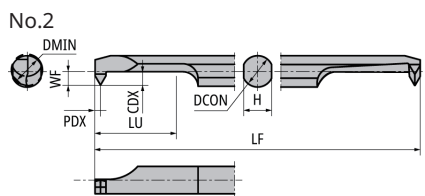
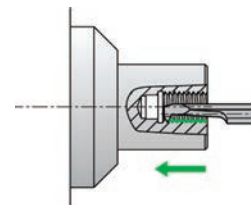
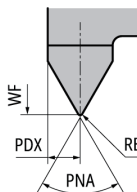
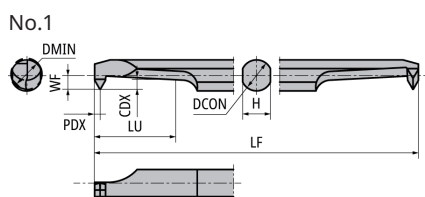


● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	DAXN	APMX	CDX	CW	DCON	GAN	H	LF	LU	REL	RER	WF	Carbide PVD
			mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	TM4
SFG060R100B	R	Yes	6	1.5	1.7	1	6	14	5.4	80	16	0.05	0.05	2.8	●
SFG060R150B	R	Yes	6	2	2.2	1.5	6	14	5.4	80	16	0.05	0.05	2.8	●
SFG060R200B	R	Yes	6	3	3.2	2	6	14	5.4	80	16	0.05	0.05	2.8	●
SFG080R100B	R	Yes	8	1.5	1.7	1	8	14	7.3	80	16	0.05	0.05	3.8	●
SFG080R150B	R	Yes	8	2	2.2	1.5	8	14	7.3	80	16	0.05	0.05	3.8	●
SFG080R200B	R	Yes	8	3	3.2	2	8	14	7.3	80	16	0.05	0.05	3.8	●
SFG080R300B	R	Yes	8	3	3.2	3	8	14	7.3	80	16	0.05	0.05	3.8	●

SB.. series/Insert bar Carbide for Internal Thread

SBT

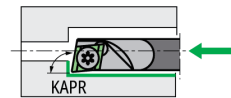
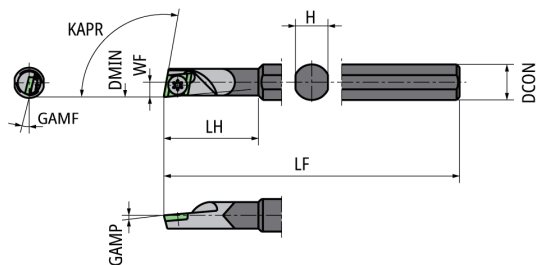


● Diagram shows right-hand tool

● No.1: Eccentric tapered shape

Figure	Item Number	Hand	Chip-breaker	DMIN	Pitch	CDX	DCON	H	LF	LU	PDX	PNA	RE	WF	Carbide PVD
				mm	mm	mm	mm	mm	mm	mm	mm	°	mm	mm	ZM3
1	SBT025M3R	R	No	2.5	0.5	0.6	2.5	2.3	50	5.4	0.4	60	0.05MAX Flat	1.1	●
1	SBT030M4R	R	No	3	0.5-0.8	0.8	3	2.7	50	7.5	0.5	60	0.05MAX Flat	1.3	●
1	SBT030M4RB	R	Yes	3	0.5-0.8	0.8	3	2.7	50	7.5	0.5	60	0.05MAX Flat	1.3	●
1	SBT035M5RB	R	Yes	3.5	0.5-1	1	3.5	3.2	60	8.5	0.55	60	0.05MAX Flat	1.55	●
1	SBT040M6RB	R	Yes	4	0.75-1.25	1.2	4	3.6	60	10.5	0.7	60	0.05	1.8	●
2	SBT050M8RB	R	Yes	5	0.75-1.5	1.5	5	4.5	70	15.8	0.8	60	0.05	2.3	●
2	SBT060M10RB	R	Yes	6	0.75-1.75	1.8	6	5.4	80	18.4	0.95	60	0.05	2.8	●

C06-MBR Carbide shank



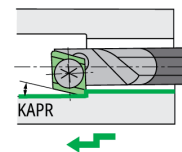
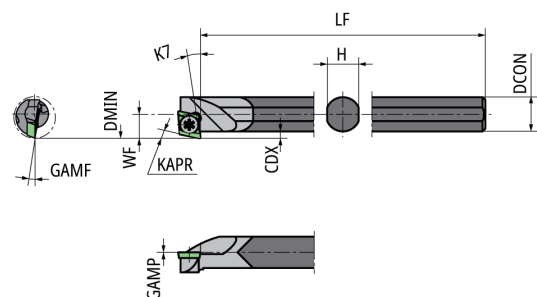
- Diagram shows right-hand tool
- Use a left-handed insert
- For F1 chipbreaker, right-hand inserts fit to right-hand toolholder
- F1 chipbreaker evacuates chips BACKWARD

EDP	Item Number	Stock	Hand	DMIN mm	DCON mm	GAMF °	GMAP °	H mm	KAPR °	LF mm	LH mm	RE mm	WF mm	Insert Gage
5162706	C06F-MBR	●	R	5	6	13	5	5.5	100	80	18	0.15	2.5	MBL..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
C06F-MBR	LR-S-2*3.5	CLR-13S

C-MSBR Carbide shank for ID Back Turning



- Diagram shows right-hand tool
- Use a left-handed insert
- For F1 chipbreaker, right-hand inserts fit to right-hand toolholder
- F1 chipbreaker evacuates chips BACKWARD

EDP	Item Number	Stock	Hand	DMIN mm	CDX mm	DCON mm	GAMF °	GMAP °	H mm	KAPR °	LF mm	RE mm	WF mm	Insert Gage
5161054	C04J-MSBR	●	R	5.7	1	4	10	0	3.5	13	110	0.15	3.2	MBL..
5161047	C06J-MSBR	●	R	7.7	1	6	4	0	5.5	13	110	0.15	4.2	MBL..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
C04J-MSBR	LR-S-2*3.5	CLR-13S
C06J-MSBR	LR-S-2*3.5	CLR-13S

MBL.. series/Inserts Carbide

MBL

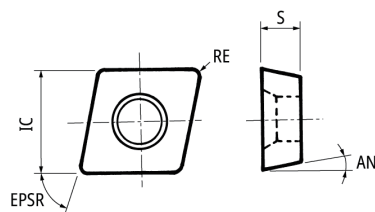
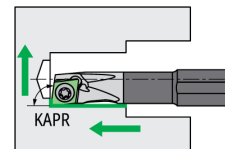
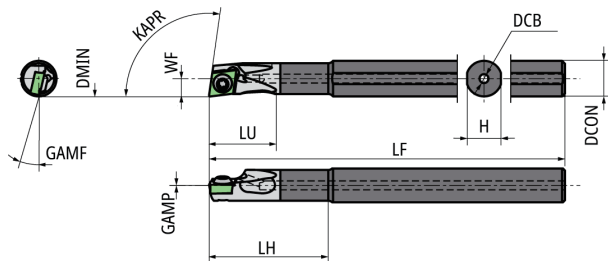


Figure	Item Number	Hand	Chip-breaker	AN	EPSR	IC	RE	S	Carbide PVD			
				°	°	mm	mm	mm	QM3	ST4	TM4	ZM3
1	MBL005FL	L	Yes	9	75	3.6	0.05	1	●		●	●
1	MBL015FL	L	Yes	9	75	3.6	0.15	1	●		●	●
2	MBL005FRF1	R	Yes	9	75	3.6	0.05	1	●	●	●	
2	MBL015FRF1	R	Yes	9	75	3.6	0.15	1	●	●	●	

C06-SEXR-OH Mogul Bar / Coolant through / Carbide shank



- Diagram shows right-hand tool
- Use a left-handed insert
- For F1 chipbreaker, right-hand inserts fit to right-hand toolholder
- F1 chipbreaker evacuates chips BACKWARD

EDP	Item Number	Stock	Hand	DMIN mm	DCB mm	DCON mm	GAMF °	GMAP °	H mm	KAPR °	LF mm	LH mm	LU mm	RE mm	WF mm	Insert Gage
5789938	C06G-SEXRRT3D06-OH	●	R	6	1.5	6	13	0	5.7	98	90	20	11	0.2	3	ERGHT301..
5800487	C06G-SEXRLT3D06-OH	●	L	6	1.5	6	13	0	5.7	98	90	20	11	0.2	3	ERGHT301..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
C06G-SEXRRT3D06-OH	LR-S-2*3.7	CLR-13S
C06G-SEXRLT3D06-OH	LR-S-2*3.7	CLR-13S

ERGH.. series/Inserts Carbide

ERGH

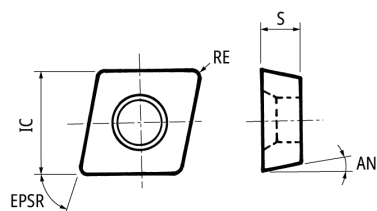
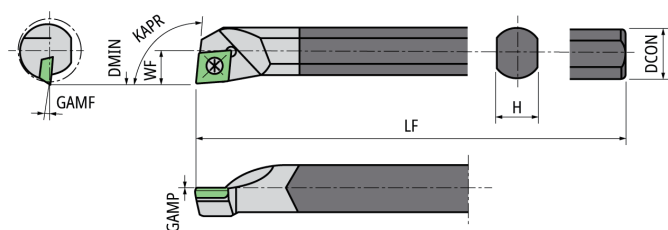


Figure	Item Number	Hand	Chip-breaker	AN °	EPSR °	IC mm	RE mm	S mm	Carbide PVD	QM3	ST4	TM4	ZM3
1	ERGHT30102FRA2	R	Yes	9	75	3.97	0.2	1.59				●	●
1	ERGHT30104FRA2	R	Yes	9	75	3.97	0.4	1.59				●	
1	ERGHT30102FLA2	L	Yes	9	75	3.97	0.2	1.59				●	●
1	ERGHT30104FLA2	L	Yes	9	75	3.97	0.4	1.59				●	●
2	ERGHT30101FRF1	R	Yes	9	75	3.97	0.1	1.59	●	●	●		
2	ERGHT30102FRF1	R	Yes	9	75	3.97	0.2	1.59	●	●	●		
2	ERGHT30104FRF1	R	Yes	9	75	3.97	0.4	1.59	●	●	●		

C-SCLP-N Carbide shank



- Diagram shows right-hand tool
- Use a left-handed insert
- For F1 chipbreaker, right-hand inserts fit to right-hand toolholder
- F1 chipbreaker evacuates chips BACKWARD

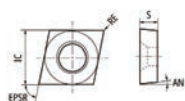
EDP	Item Number	Stock	Hand	DMIN mm	DCON mm	GAMF °	GMAP °	H mm	KAPR °	LF mm	RE mm	WF mm	Insert Gage
5853288	C06J-SCLPR-04-N	●	R	8	6	6	0	5.2	95	110	0.4	4	CP..0401..
5853296	C08K-SCLPR-06-N	●	R	10	8	10	0	7	95	125	0.4	5	CP..0602..
5853304	C10M-SCLPR-08-N	●	R	12	10	6	0	9	95	150	0.4	6	CP..0802..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
C06J-SCLPR-04-N	LR-S-2*4.4	CLR-13S
C08K-SCLPR-06-N	LR-S-2.5*5.5	CLR-15S
C10M-SCLPR-08-N	LR-S-3*6.2	RLR-20S

CP.. series/Inserts Carbide

CP..

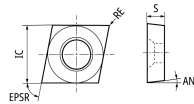


Steel	○	●	●	●	●	●	●	●	●
Stainless Steel	●	○	○	○	●	○	●	●	●
Cast Iron									●
Non-Ferrous Material						○		○	●
Heat Resistant Alloy		●	○	○					
Hardened Material		○	○	○					
Others (non-metallic)									●

Shape	Item Number (ISO)	CECC	EPSR °	IC mm	S mm	AN °	RE mm	BS mm	Carbide										Uncoated
									PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	
	CPGH060202FNAM5	Up-sharp edge	80	6.35	2.38	11	0.2	-						●		●			
	CPGH080202FNAM5	Up-sharp edge	80	6.35	2.38	11	0.2	-						●		●			
	CPGH040101FRF1	Up-sharp edge	80	4.76	1.59	11	0.1	-	●				●	●					
	CPGH040102FRF1	Up-sharp edge	80	4.76	1.59	11	0.2	-	●				●	●					
	CPGH040104FRF1	Up-sharp edge	80	4.76	1.59	11	0.4	-	●				●	●					
	CPGH060202FRF1	Up-sharp edge	80	6.35	2.38	11	0.2	-	●				●	●					
	CPGH060204FRF1	Up-sharp edge	80	6.35	2.38	11	0.4	-	●				●	●					
	CPGH040101LS	Up-sharp edge	80	4.76	1.59	11	0.1	-					●	●					
	CPGH040102LS	Up-sharp edge	80	4.76	1.59	11	0.2	-					●	●					
	CPGH040104LS	Up-sharp edge	80	4.76	1.59	11	0.4	-					●	●					
	CPGH060202LS	Up-sharp edge	80	6.35	2.38	11	0.2	-					●	●					
	CPGH060204LS	Up-sharp edge	80	6.35	2.38	11	0.4	-					●	●					
	CPGH060202FLA	Up-sharp edge	80	6.35	2.38	11	0.2	-						●		●			
	CPGH060204FLA	Up-sharp edge	80	6.35	2.38	11	0.4	-						●		●			
	CPGH080202FLA	Up-sharp edge	80	6.35	2.38	11	0.2	-						●		●			
	CPGH080204FLA	Up-sharp edge	80	6.35	2.38	11	0.4	-						●		●			
	CPGH040102FLA1	Up-sharp edge	80	4.76	1.59	11	0.2	-						●		●			
	CPGH040104FLA1	Up-sharp edge	80	4.76	1.59	11	0.4	-						●		●			

CC.. series/Inserts Carbide

CC..

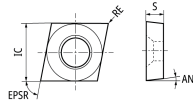


Steel	○	●	●	●	●	●	●	●	●
Stainless Steel	●	○	○	○	●	○	●	●	●
Cast Iron								●	
Non-Ferrous Material						○	○		●
Heat Resistant Alloy	●	○	○						
Hardened Material	○	○	○						
Others (non-metallic)									●

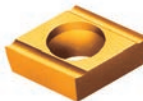
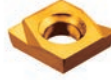
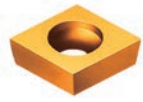
Shape	Item Number (ISO)	CECC	EPSR °	IC mm	S mm	AN °	RE mm	BS mm	Carbide											Uncoated KM1
									PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	
									ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	CP7	CP7	
	CCGT09T300YL	Up-sharp edge	80	9.525	3.97	7	0.03	-			●		●							
	CCGT09T301MYL	Up-sharp edge	80	9.525	3.97	7	0.08	-	●	●	●	●	●							
	CCGT09T302MYL	Up-sharp edge	80	9.525	3.97	7	0.18	-	●	●	●	●	●							
	CCGT09T304MYL	Up-sharp edge	80	9.525	3.97	7	0.38	-	●	●	●	●	●							
	CCGT09T308MYL	Up-sharp edge	80	9.525	3.97	7	0.78	-	●	●	●	●	●							
	CCGT060201MCL	Up-sharp edge	80	6.35	2.38	7	0.08	-	●	●	●	●	●							
	CCGT060202MCL	Up-sharp edge	80	6.35	2.38	7	0.18	-	●	●	●	●	●							
	CCGT09T300CL	Up-sharp edge	80	9.525	3.97	7	0.03	-			●		●							
	CCGT09T301MCL	Up-sharp edge	80	9.525	3.97	7	0.08	-	●	●	●	●	●							
	CCGT09T302MCL	Up-sharp edge	80	9.525	3.97	7	0.18	-	●	●	●	●	●							
	CCGT09T304MCL	Up-sharp edge	80	9.525	3.97	7	0.38	-	●	●	●	●	●							
	CCGT060200FNAM3	Up-sharp edge	80	6.35	2.38	7	0.03	-			●		●	●						
	CCGT060201MFNAM3	Up-sharp edge	80	6.35	2.38	7	0.08	-	●		●	●	●							
	CCGT060202FNAM3	Up-sharp edge	80	6.35	2.38	7	0.2	-						●	●					
	CCGT060202MFNAM3	Up-sharp edge	80	6.35	2.38	7	0.18	-	●		●	●	●							
	CCGT060204FNAM3	Up-sharp edge	80	6.35	2.38	7	0.4	-							●					
	CCGT060204MFNAM3	Up-sharp edge	80	6.35	2.38	7	0.38	-	●		●	●	●							
	CCGT09T300FNAM3	Up-sharp edge	80	9.525	3.97	7	0.03	-			●		●	●						
	CCGT09T301MFNAM3	Up-sharp edge	80	9.525	3.97	7	0.08	-	●		●	●	●	●	●					
	CCGT09T302FNAM3	Up-sharp edge	80	9.525	3.97	7	0.2	-				●		●						
	CCGT09T302MFNAM3	Up-sharp edge	80	9.525	3.97	7	0.18	-	●		●	●	●	●	●					
	CCGT09T304FNAM3	Up-sharp edge	80	9.525	3.97	7	0.4	-				●		●						
	CCGT09T304MFNAM3	Up-sharp edge	80	9.525	3.97	7	0.38	-	●		●	●	●	●	●					
	CCMT060202FNAM3	Up-sharp edge	80	6.35	2.38	7	0.2	-		●										
	CCMT060204FNAM3	Up-sharp edge	80	6.35	2.38	7	0.4	-		●										
	CCMT09T302FNAM3	Up-sharp edge	80	9.525	3.97	7	0.2	-		●										
	CCMT09T304FNAM3	Up-sharp edge	80	9.525	3.97	7	0.4	-		●										
	CCMT09T308FNAM3	Up-sharp edge	80	9.525	3.97	7	0.8	-		●										
	CCGT060200AZ7	Up-sharp edge	80	6.35	2.38	7	0.03	-				●								
	CCGT060201MAZ7	Up-sharp edge	80	6.35	2.38	7	0.08	-				●								
	CCGT060202MAZ7	Up-sharp edge	80	6.35	2.38	7	0.18	-				●								
	CCGT09T300AZ7	Up-sharp edge	80	9.525	3.97	7	0.03	-			●	●	●			●				
	CCGT09T301MAZ7	Up-sharp edge	80	9.525	3.97	7	0.08	-			●	●	●			●				
	CCGT09T302MAZ7	Up-sharp edge	80	9.525	3.97	7	0.18	-			●	●	●			●				
	CCGT09T304MAZ7	Up-sharp edge	80	9.525	3.97	7	0.38	-			●	●	●			●				
	CCMT060202E002AZ8	E002	80	6.35	2.38	7	0.2	-												●
	CCMT060204E004AZ8	E004	80	6.35	2.38	7	0.4	-												●
	CCMT060208E004AZ8	E004	80	6.35	2.38	7	0.8	-												●
	CCMT09T302E002AZ8	E002	80	6.35	2.38	7	0.2	-												●
	CCMT09T304E004AZ8	E004	80	6.35	2.38	7	0.4	-												●
	CCMT09T308E004AZ8	E004	80	6.35	2.38	7	0.8	-												●
	CCGT060200RS	Up-sharp edge	80	6.35	2.38	7	0.03	-			●			●	●					
	CCGT060201MRS	Up-sharp edge	80	6.35	2.38	7	0.08	-			●	●								
	CCGT060202MRS	Up-sharp edge	80	6.35	2.38	7	0.18	-			●	●								
	CCGT09T300RS	Up-sharp edge	80	9.525	3.97	7	0.03	-			●		●	●	●					
	CCGT09T301MRS	Up-sharp edge	80	9.525	3.97	7	0.08	-			●	●	●							
	CCGT09T301RS	Up-sharp edge	80	9.525	3.97	7	0.1	-				●		●	●					
	CCGT09T302MRS	Up-sharp edge	80	9.525	3.97	7	0.18	-			●	●	●							
	CCGT09T302RS	Up-sharp edge	80	9.525	3.97	7	0.2	-				●		●	●					
	CCGT09T304MRS	Up-sharp edge	80	9.525	3.97	7	0.38	-			●	●	●							
	CCGT09T304RS	Up-sharp edge	80	9.525	3.97	7	0.4	-				●								

ID Tooling

V

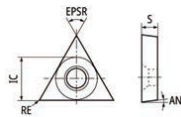


Steel	○	●	●	●	●	●	●	●	●
Stainless Steel	●	○	○	○	●	○	●	●	●
Cast Iron								●	
Non-Ferrous Material						○	○		●
Heat Resistant Alloy		●	○	○					
Hardened Material		○	○	○					
Others (non-metallic)									●

Shape	Item Number	CECC	EPSR	IC	S	AN	RE	BS	Carbide											Uncoated
									PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	
									ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1		
(ISO)	°	mm	mm	°	mm	mm														
	CCGT060200RU	Up-sharp edge	80	6.35	2.38	7	0.03	-			●				●					
	CCGT060201RU	Up-sharp edge	80	6.35	2.38	7	0.1	-			●				●					
	CCGT060202RU	Up-sharp edge	80	6.35	2.38	7	0.2	-			●				●					
	CCGT09T300RU1	Up-sharp edge	80	9.525	3.97	7	0.03	-			●		●		●					
	CCGT09T301RU1	Up-sharp edge	80	9.525	3.97	7	0.1	-			●		●		●					
	CCGT09T302RU1	Up-sharp edge	80	9.525	3.97	7	0.2	-			●		●		●					
	CCGT09T304RU1	Up-sharp edge	80	9.525	3.97	7	0.4	-			●		●		●					
	CCGT060201LU	Up-sharp edge	80	6.35	2.38	7	0.1	-							●					
	CCGT060202LU	Up-sharp edge	80	6.35	2.38	7	0.2	-							●					
	CCGT09T300LU1	Up-sharp edge	80	9.525	3.97	7	0.03	-							●					
	CCGT09T301LU1	Up-sharp edge	80	9.525	3.97	7	0.1	-							●					
	CCGT09T302LU1	Up-sharp edge	80	9.525	3.97	7	0.2	-							●					
CCGT09T304LU1	Up-sharp edge	80	9.525	3.97	7	0.4	-							●						
	CCET09T3005RKHG	Up-sharp edge	80	9.525	3.97	7	0.05	-					●	●						
	CCET09T3008RKHG	Up-sharp edge	80	9.525	3.97	7	0.08	-					●	●						
	CCET09T3018RKHG	Up-sharp edge	80	9.525	3.97	7	0.18	-					●	●						
	CCET09T302RKHG	Up-sharp edge	80	9.525	3.97	7	0.2	-					●	●						
	CCGT060201FRF1	Up-sharp edge	80	6.35	2.38	7	0.1	-	●			●	●							
	CCGT060202FRF1	Up-sharp edge	80	6.35	2.38	7	0.2	-	●			●	●							
	CCGT060204FRF1	Up-sharp edge	80	6.35	2.38	7	0.4	-	●			●	●							
	CCGT09T302FRF1	Up-sharp edge	80	6.35	2.38	7	0.2	-	●			●	●							
	CCGT09T304FRF1	Up-sharp edge	80	6.35	2.38	7	0.4	-	●			●	●							
	CCGW060200FN	Up-sharp edge	80	6.35	2.38	7	0.03	-							●					
	CCGW060200H	Up-sharp edge	80	6.35	2.38	7	0.03	-										●		
	CCGW060201FN	Up-sharp edge	80	6.35	2.38	7	0.1	-							●					
	CCGW060201H	Up-sharp edge	80	6.35	2.38	7	0.1	-										●		
	CCGW060202H	Up-sharp edge	80	6.35	2.38	7	0.2	-										●		
	CCGW09T300FN	Up-sharp edge	80	9.525	3.97	7	0.03	-							●					
	CCGW09T300H	Up-sharp edge	80	9.525	3.97	7	0.03	-										●		
	CCGW09T301FN	Up-sharp edge	80	9.525	3.97	7	0.1	-							●					
	CCGW09T301H	Up-sharp edge	80	9.525	3.97	7	0.1	-										●		
	CCGW09T302H	Up-sharp edge	80	9.525	3.97	7	0.2	-										●		
	CCGW09T302MP	Up-sharp edge	80	9.525	3.97	7	0.18	-			●									

TP.. series/Inserts Carbide

TPGH

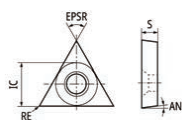


Steel	○	●	●	●	●	●	●	●	●
Stainless Steel	●	○	○	○	●	○	●	●	●
Cast Iron								●	
Non-Ferrous Material						○	○		●
Heat Resistant Alloy		●	○	○					
Hardened Material		○	○	○					
Others (non-metallic)									●

Shape	Item Number	CECC	EPSR	IC	S	AN	RE	BS	Carbide										Uncoated
									PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	
									ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1	
	TPGH090202RFG	Up-sharp edge	60	5.56	2.38	11	0.2	-	●			●	●						
	TPGH090204RFG	Up-sharp edge	60	5.56	2.38	11	0.4	-	●			●	●						
	TPGH110302RFG	Up-sharp edge	60	6.35	3.18	11	0.2	-	●			●	●						
	TPGH110304RFG	Up-sharp edge	60	6.35	3.18	11	0.4	-	●			●	●						
	TPGH080202FRF1	Up-sharp edge	60	4.76	2.38	11	0.2	-					●	●	●				
	TPGH080204FRF1	Up-sharp edge	60	4.76	2.38	11	0.4	-					●	●	●				
	TPGH090201FRF1	Up-sharp edge	60	5.56	2.38	11	0.1	-	●			●	●						
	TPGH090202FRF1	Up-sharp edge	60	5.56	2.38	11	0.2	-	●			●	●	●	●				
	TPGH090204FRF1	Up-sharp edge	60	5.56	2.38	11	0.4	-	●			●	●	●	●				
	TPGH090208FRF1	Up-sharp edge	60	5.56	2.38	11	0.8	-	●			●	●	●	●				
	TPGH110302FRF1	Up-sharp edge	60	6.35	3.18	11	0.2	-	●			●	●	●	●				
	TPGH110304FRF1	Up-sharp edge	60	6.35	3.18	11	0.4	-	●			●	●	●	●				
	TPGH110308FRF1	Up-sharp edge	60	6.35	3.18	11	0.8	-	●			●	●	●	●				
	TPGH090202FLK	Up-sharp edge	60	5.56	2.38	11	0.2	-					●						
	TPGH090204FLK	Up-sharp edge	60	5.56	2.38	11	0.4	-					●						
	TPGH090208FLK	Up-sharp edge	60	5.56	2.38	11	0.8	-					●						
	TPGH090202FLB2	Up-sharp edge	60	5.56	2.38	11	0.2	-					●		●				
	TPGH090204FLB2	Up-sharp edge	60	5.56	2.38	11	0.4	-					●		●				
	TPGH090208FLB2	Up-sharp edge	60	5.56	2.38	11	0.8	-					●		●				
	TPGH080202FLB3	Up-sharp edge	60	4.76	2.38	11	0.2	-					●		●				
	TPGH080204FLB3	Up-sharp edge	60	4.76	2.38	11	0.4	-					●		●				

TC.. series/Inserts Carbide

TCG.

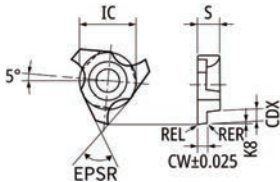


Steel	○	●	●	●	●	●	●	●	●
Stainless Steel	●	○	○	○	●	○	●	●	●
Cast Iron								●	
Non-Ferrous Material						○	○		●
Heat Resistant Alloy		●	○	○					
Hardened Material		○	○	○					
Others (non-metallic)									●

Shape	Item Number	CECC	Carbide																	Uncoated
			EPSR	IC	S	AN	RE	BS	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD		
			(ISO)	°	mm	mm	°	mm	mm	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1	
	TCGH060101FRF05	Up-sharp edge	60	3.97	1.59	7	0.1	-	●			●	●							
	TCGH060102FLF05	Up-sharp edge	60	3.97	1.59	7	0.2	-					●			●				
	TCGH060102FRF05	Up-sharp edge	60	3.97	1.59	7	0.2	-	●			●	●			●				
	TCGH060104FRF05	Up-sharp edge	60	3.97	1.59	7	0.4	-	●			●	●			●				
	TCGH060102FLK	Up-sharp edge	60	3.97	1.59	7	0.2	-					●							
	TCGH060104FLK	Up-sharp edge	60	3.97	1.59	7	0.4	-					●							
	TCGH060102FLB1	Up-sharp edge	60	3.97	1.59	7	0.2	-					●			●				
	TCGH060104FLB1	Up-sharp edge	60	3.97	1.59	7	0.4	-					●			●				

GTG.. series/Inserts Carbide

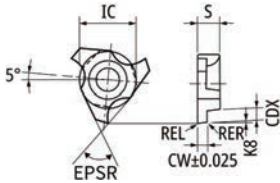
GTG..005



● Diagram shows left-hand tool

Item Number	Hand	Chip-breaker	APMX	CDX	CW	EPSR	IC	K8	REL	RER	S	Carbide PVD		
			mm	mm	mm	°	mm	°	mm	mm	mm	QM3	TM4	ZM3
GTG10050FL005	L	Yes	1	1.2	0.5	60	5.56	2	0.05	0.05	3.18		●	
GTG10075FL005	L	Yes	1	1.2	0.75	60	5.56	2	0.05	0.05	3.18		●	
GTG10100FL005	L	Yes	1	1.2	1	60	5.56	2	0.05	0.05	3.18		●	
GTG10150FL005	L	Yes	1	1.2	1.5	60	5.56	2	0.05	0.05	3.18		●	
GTG10200FL005	L	Yes	1	1.2	2	60	5.56	2	0.05	0.05	3.18		●	

GTG..



● Diagram shows left-hand tool

Item Number	Hand	Chip-breaker	APMX	CDX	CW	EPSR	IC	K8	REL	RER	S	Carbide PVD		
			mm	mm	mm	°	mm	°	mm	mm	mm	QM3	TM4	ZM3
GTG10050FL00	L	Yes	1	1.2	0.5	60	5.56	2	0.05	0.05	3.18			●
GTG10065FL00	L	Yes	1	1.2	0.65	60	5.56	2	0.05	0.05	3.18			●
GTG10075FL00	L	Yes	1	1.2	0.75	60	5.56	2	0.05	0.05	3.18			●
GTG10100FL00	L	Yes	1	1.2	1	60	5.56	2	0.05	0.05	3.18			●
GTG10150FL00	L	Yes	1	1.2	1.5	60	5.56	2	0.05	0.05	3.18			●
GTG10200FL01	L	Yes	1	1.2	2	60	5.56	2	0.1	0.1	3.18			●
GTG14100FL00	L	Yes	2	2.2	1	60	7.94	2	0.05	0.05	3.18			●
GTG14150FL00	L	Yes	2	2.2	1.5	60	7.94	2	0.05	0.05	3.18			●
GTG14200FL01	L	Yes	2	2.2	2	60	7.94	2	0.1	0.1	3.18			●
GTG20150FL	L	Yes	3	3.2	1.5	60	9.525	2	0.2	0.2	3.18	●		
GTG20200FL	L	Yes	3	3.2	2	60	9.525	2	0.2	0.2	3.18	●		

ID Tooling
V