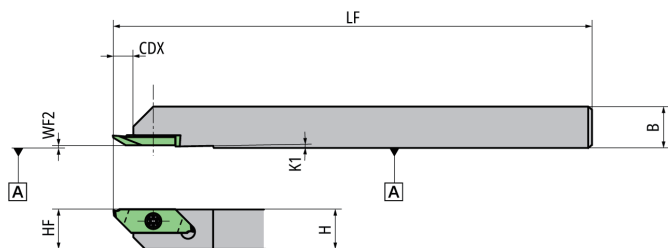


CTPS.. series/Toolholder

CTPS



● Diagram shows right-hand tool



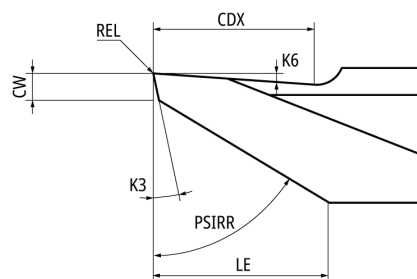
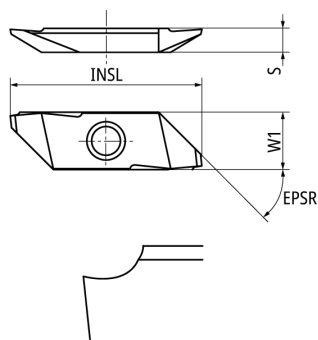
EDP	Item Number	Stock	Hand	B mm	CDX mm	H mm	HF mm	K1 °	LF mm	WF2 mm	Insert Gage	
5346572	CTPSR10	●	R	10	5	10	10	1	120	0	TBPS../CTPS..	GTPS../TTPS..
5397187	CTPSR12	●	R	12	5	12	12	1	120	0	TBPS../CTPS..	GTPS../TTPS..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
CTPSR10	LRIS-2.5*7	CLR-15S
CTPSR12	LRIS-2.5*7	CLR-15S

TBPS.. series/Inserts Carbide

TBPS

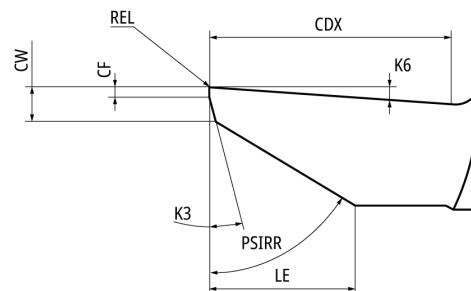
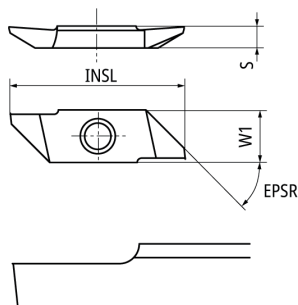


● Diagram shows right-hand tool

All angles shown are obtained when insert is set in the holder.

Item Number	Hand	Chip-breaker	LE	CDX	CW	EPSR	INSL	K3	K6	PSIRR	REL	S	W1	Carbide PVD	
			mm	mm	mm	°	mm	°	°	°	mm	mm	mm	VM1	ZM3
TBPS60FR00	R	Yes	3.1	3.5	0.5	45	20	12	3	60	0	2.5	6	●	●
TBPS60FR10	R	Yes	3.1	3.5	0.5	45	20	12	3	60	0.1	2.5	6	●	●

TBPS-V



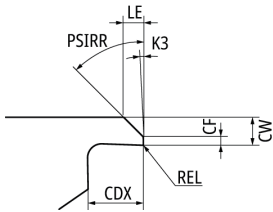
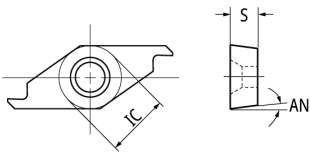
● Diagram shows right-hand tool

All angles shown are obtained when insert is set in the holder.

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	K6	PSIRR	REL	S	W1	Carbide PVD	
			mm	mm	mm	mm	°	mm	°	°	°	mm	mm	mm	VM1	ZM3
TBPS60FRV	R	No	3.1	4.8	0.2	0.7	45	20	15	3	60	0	2.5	6	●	●

CSVB.. series/Inserts Carbide

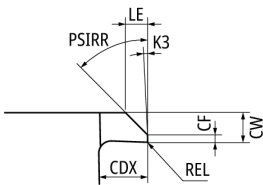
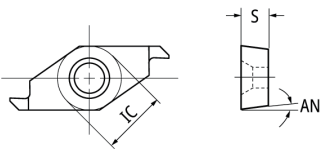
CSVB-V



● Diagram shows right-hand tool
All angles shown are obtained when insert is set in the holder.

Item Number	Hand	Chip-breaker	AN	CDX	CF	CW	EPSR	IC	K3	LE	PSIRR	REL	S	Carbide PVD		
			°	mm	mm	mm	°	mm	°	mm	°	mm	mm	DT4	VM1	ZM3
CSVB11FRV		R	No	7	2	0.3	1	35	6.35	5	0.7	45	0	2.38	●	
CSVB11FRV12		R	No	7	2	0.3	1.2	35	6.35	5	0.8	45	0	2.38	●	
CSVB11FRV14		R	No	7	2	0.3	1.4	35	6.35	5	1	45	0	2.38	●	
CSVB11FRV-A		R	No	7	2	0.3	1	35	6.35	2	0.7	45	0	2.38	●	
CSVB11FRV-C		R	No	7	2	0.15	1	35	6.35	5	0.7	45	0	2.38	●	
CSVB11FRV-M		R	No	7	2	0.15	1	35	6.35	2	0.7	45	0	2.38	●	●
CSVB11FLV		L	No	7	2	0.3	1	35	6.35	5	0.7	45	0	2.38	●	
CSVB11FLV-M		L	No	7	2	0.15	1	35	6.35	2	0.7	45	0	2.38	●	

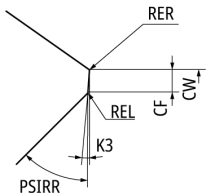
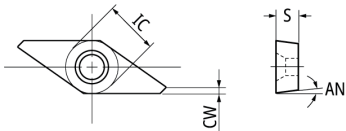
CSVB-VB



● Diagram shows right-hand tool
All angles shown are obtained when insert is set in the holder.

Item Number	Hand	Chip-breaker	AN	CDX	CF	CW	EPSR	IC	K3	LE	PSIRR	REL	S	Carbide PVD		
			°	mm	mm	mm	°	mm	°	mm	°	mm	mm	DT4	VM1	ZM3
CSVB11FRVB		R	Yes	7	2	0.3	1	35	6.35	5	0.7	45	0	2.38	●	
CSVB11FRVB12		R	Yes	7	2	0.3	1.2	35	6.35	5	0.8	45	0	2.38	●	
CSVB11FRVB14		R	Yes	7	2	0.3	1.4	35	6.35	5	1	45	0	2.38	●	
CSVB11FRVB-A		R	Yes	7	2	0.3	1	35	6.35	2	0.7	45	0	2.38	●	
CSVB11FRVB-C		R	Yes	7	2	0.15	1	35	6.35	5	0.7	45	0	2.38	●	
CSVB11FRVB-M		R	Yes	7	2	0.15	1	35	6.35	2	0.7	45	0	2.38	●	●
CSVB11FLVB-M		L	Yes	7	2	0.15	1	35	6.35	2	0.7	45	0	2.38	●	

CSVB-VX For Profiling

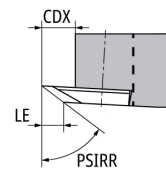
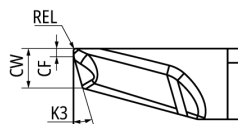
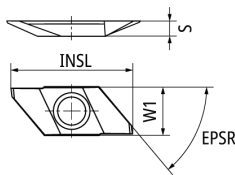


● Diagram shows left-hand tool
All angles shown are obtained when insert is set in the holder.

Item Number	Hand	Chip-breaker	AN	CF	CW	EPSR	IC	K3	PSIRL	REL	RER	S	Carbide PVD		
			°	mm	mm	°	mm	°	°	mm	mm	mm	DT4	VM1	ZM3
CSVB11FLVX		L	No	7	0.035	0.7	35	6.35	5	45	0	0	2.38	●	

TBP.. series/Inserts Carbide

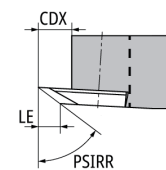
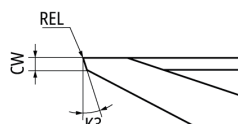
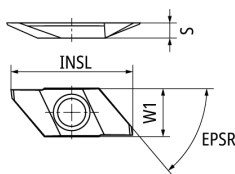
TBP-BM with BM-Chipbreaker



● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD						PCD
			mm	mm	mm	mm	°	mm	°	mm	°	mm	mm	DM4	ST4	TM4	VM1	ZM3	KM1	PD1
TBP72FR05-BM	R	Yes	3.5	5.3	0.3	1.4	50	20	16	72	0.05	2.5	8	●	●	●				
TBP72FR10M-BM	R	Yes	3.5	5.3	0.3	1.4	50	20	16	72	0.08	2.5	8	●	●	●				
TBP72FR20M-BM	R	Yes	3.5	5.3	0.3	1.4	50	20	16	72	0.18	2.5	8	●	●	●				

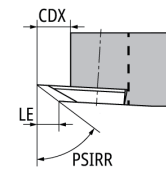
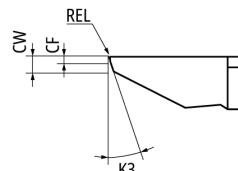
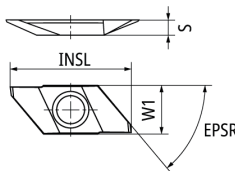
TBP with Chipbreaker



● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD						PCD
			mm	mm	mm	mm	°	mm	°	mm	°	mm	mm	DM4	ST4	TM4	VM1	ZM3	KM1	PD1
TBP55FR00	R	Yes	3	5.3	-	0.5	50	20	15	55	0	2.5	8				●	●		
TBP55FR10	R	Yes	3	5.3	-	0.5	50	20	15	55	0.1	2.5	8				●	●		
TBP60FR00	R	Yes	3.7	5.3	-	0.5	50	20	15	60	0	2.5	8			●	●	●		
TBP60FR10	R	Yes	3.7	5.3	-	0.5	50	20	15	60	0.1	2.5	8			●	●	●		
TBP60FR10M	R	Yes	3.7	5.3	-	0.5	50	20	15	60	0.08	2.5	8				●			
TBP60FR20	R	Yes	3.7	5.3	-	0.5	50	20	15	60	0.2	2.5	8			●				
TBP55FL00	L	Yes	3	5.3	-	0.5	50	20	15	55	0	2.5	8					●		
TBP55FL10	L	Yes	3	5.3	-	0.5	50	20	15	55	0.1	2.5	8					●		
TBP60FL00	L	Yes	3.7	5.3	-	0.5	50	20	15	60	0	2.5	8					●		
TBP60FL10	L	Yes	3.7	5.3	-	0.5	50	20	15	60	0.1	2.5	8					●		

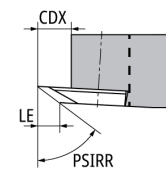
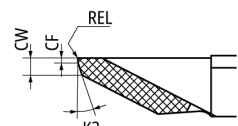
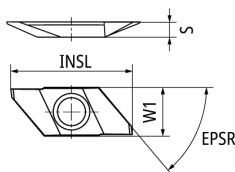
TBP-V without Chipbreaker



● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD						PCD
			mm	mm	mm	°	mm	°	mm	°	mm	mm	mm	DM4	ST4	TM4	VM1	ZM3	KM1	PD1
TBP60FRV	R	No	4.8	5.3	0.2	0.7	50	20	15	60	0	2.5	8				●	●	●	
TBP60FRV05	R	No	4.8	5.3	0.2	0.7	50	20	15	60	0.05	2.5	8				●	●	●	
TBP60FRV10	R	No	4.8	5.3	0.2	0.7	50	20	15	60	0.1	2.5	8				●	●	●	
TBP60FLV	L	No	4.8	5.3	0.2	0.7	50	20	15	60	0	2.5	8				●			

TBP-P PCD tipped

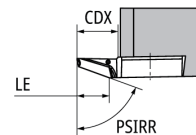
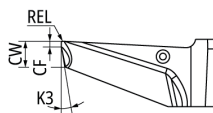
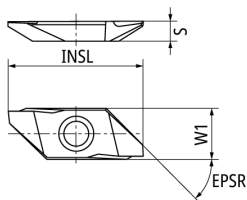


● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD						PCD
			mm	mm	mm	°	mm	°	mm	°	mm	mm	mm	DM4	ST4	TM4	VM1	ZM3	KM1	PD1
TBP60FRV00-P	R	No	4	5.3	0.2	0.7	50	20	15	60	0	2.5	8							●
TBP60FRV10-P	R	No	4	5.3	0.2	0.7	50	20	15	60	0.1	2.5	8							●

TBPA.. series/Inserts Carbide

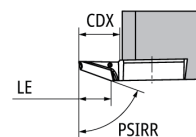
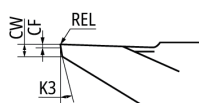
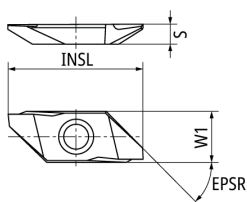
TBPA-BM with BM-Chipbreaker



● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD		
			mm	mm	mm	mm	°	mm	°	°	mm	mm	mm	DM4	ST4	TM4
TBPA70FR05-BM	R	Yes	5.5	6.5	0.3	1.35	45	25	12	70	0.05	3.5	9.4	●	●	●
TBPA70FR10M-BM	R	Yes	5.5	6.5	0.3	1.35	45	25	12	70	0.08	3.5	9.4	●	●	●
TBPA70FR20M-BM	R	Yes	5.5	6.5	0.3	1.35	45	25	12	70	0.18	3.5	9.4	●	●	●

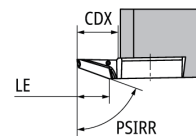
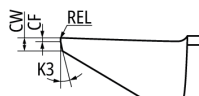
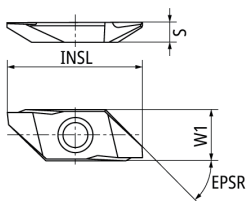
TBPA with Chipbreaker



● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD			
			mm	mm	mm	mm	°	mm	°	°	mm	mm	mm	DT4	QM3	VM1	ZM3
TBPA60FR10M	R	Yes	4.5	5.3	0.3	0.7	45	25	15	60	0.08	3.5	9.4		●		
TBPA60FRPB10	R	Yes	4.5	5.3	0.3	0.7	45	25	15	60	0.1	3.5	9.4			●	●
TBPA60FRPB10M	R	Yes	4.5	5.3	0.3	0.7	45	25	15	60	0.08	3.5	9.4	●		●	
TBPA60FRPB20M	R	Yes	4.5	5.3	0.3	0.7	45	25	15	60	0.18	3.5	9.4	●			
TBPA60FRVB	R	Yes	4.5	5.3	0.2	0.7	45	25	15	60	0	3.5	9.4	●		●	●
TBPA60FLPB10	L	Yes	4.5	5.3	0.3	0.7	45	25	15	60	0.1	3.5	9.4				●
TBPA60FLVB	L	Yes	4.5	5.3	0.2	0.7	45	25	15	60	0	3.5	9.4				●

TBPA-V without Chipbreaker

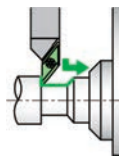
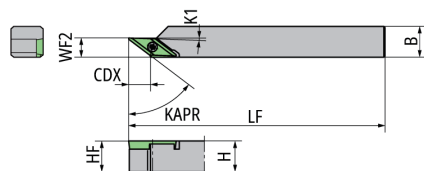


● Diagram shows right-hand tool

Item Number	Hand	Chip-breaker	LE	CDX	CF	CW	EPSR	INSL	K3	PSIRR	REL	S	W1	Carbide PVD	
			mm	mm	mm	mm	°	mm	°	°	mm	mm	mm	VM1	ZM3
TBPA60FRV	R	No	6.3	6.8	0.2	0.7	45	25	15	60	0	3.5	9.4	●	●
TBPA60FLV	L	No	6.3	6.8	0.2	0.7	45	25	15	60	0	3.5	9.4		●

TBVC.. series/Toolholder

TBVC For non-metallic



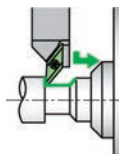
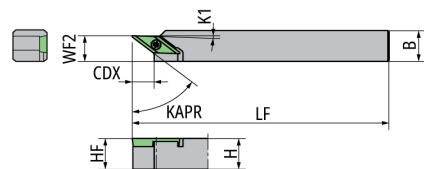
● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	B mm	CDX mm	H mm	HF mm	KAPR °	K1 °	LF mm	WF2 mm	Insert Gage	
5204953	TBVC10	●	R	10	8.5	10	10	53	2	120	7.5	TBVC11FR..	VC..1103..
5204946	TBVC12	●	R	12	8.5	12	12	53	2	120	7.5	TBVC11FR..	VC..1103..
5204920	TBVC16	●	R	16	8.5	16	16	53	2	120	7.5	TBVC11FR..	VC..1103..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
TBVC10	LRIS-2.5*7	CLR-15S
TBVC12	LRIS-2.5*7	CLR-15S
TBVC16	LRIS-2.5*7	CLR-15S

TBVC-F For Steel



● Diagram shows right-hand tool

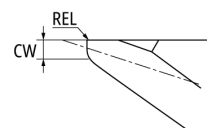
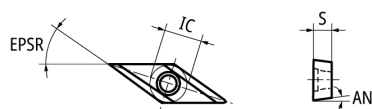
EDP	Item Number	Stock	Hand	B mm	CDX mm	H mm	HF mm	KAPR °	K1 °	LF mm	WF2 mm	Insert Gage	
5344254	TBVC10-F10	●	R	10	8.5	10	10	53	2	120	10	TBVC11FR..	VC..1103..
5344262	TBVC12-F10	●	R	12	8.5	12	12	53	2	120	10	TBVC11FR..	VC..1103..
5459797	TBVC12GX-F10	●	R	12	8.5	12	12	53	2	85	10	TBVC11FR..	VC..1103..
5344270	TBVC16-F10	●	R	16	8.5	16	16	53	2	120	10	TBVC11FR..	VC..1103..
5459805	TBVC16H-F10	●	R	16	8.5	16	16	53	2	100	10	TBVC11FR..	VC..1103..
5459565	TBVC20F-F10	●	R	20	8.5	20	20	53	2	80	10	TBVC11FR..	VC..1103..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
TBVC10-F10	LRIS-2.5*7	CLR-15S
TBVC12-F10	LRIS-2.5*7	CLR-15S
TBVC12GX-F10	LRIS-2.5*7	CLR-15S
TBVC16-F10	LRIS-2.5*7	CLR-15S
TBVC16H-F10	LRIS-2.5*7	CLR-15S
TBVC20F-F10	LRIS-2.5*7	CLR-15S

TBVC.. series/Inserts Carbide

TBVC..

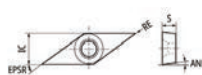


● Diagram shows right-hand tool

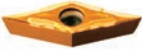
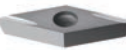
Item Number	Hand	Chip-breaker	AN	CW	EPSR	IC	REL	S	Carbide PVD	
			°	mm	°	mm	mm	mm	VM1	ZM3
TBVC11FR05U	R	Yes	7	0.5	35	6.35	0.05	3.18		●
TBVC11FR10S	R	Yes	7	0.5	35	6.35	0.1	3.18		●
TBVC11FR10U	R	Yes	7	0.5	35	6.35	0.1	3.18	●	●

VC.. series/Inserts Carbide

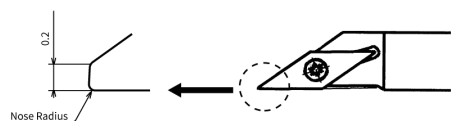
VC..



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	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1				
	VCGT110301MYL	Up-sharp edge	35	6.35	3.18	7	0.08	-	●	●	●	●	●							
	VCGT110302MYL	Up-sharp edge	35	6.35	3.18	7	0.18	-	●	●	●	●	●							
	VCGT110304MYL	Up-sharp edge	35	6.35	3.18	7	0.38	-	●	●	●	●	●							
	VCGT110202MCL	Up-sharp edge	35	6.35	2.38	7	0.18	-		●	●	●	●	●						
	VCGT110301MCL	Up-sharp edge	35	6.35	3.18	7	0.08	-	●	●	●	●	●							
	VCGT110302MCL	Up-sharp edge	35	6.35	3.18	7	0.18	-	●	●	●	●	●							
	VCGT110300FNAM3	Up-sharp edge	35	6.35	3.18	7	0.03	-			●		●	●						
	VCGT110301MFNAM3	Up-sharp edge	35	6.35	3.18	7	0.08	-	●		●	●	●	●						
	VCGT110301FNAM3	Up-sharp edge	35	6.35	3.18	7	0.1	-					●	●						
	VCGT110302MFNAM3	Up-sharp edge	35	6.35	3.18	7	0.18	-	●		●	●	●	●						
	VCGT110302FNAM3	Up-sharp edge	35	6.35	3.18	7	0.2	-					●	●						
	VCGT110304MFNAM3	Up-sharp edge	35	6.35	3.18	7	0.38	-	●		●	●	●	●						
	VCMT110302FNAM3	Up-sharp edge	35	6.35	3.18	7	0.2	-		●										
	VCMT110304FNAM3	Up-sharp edge	35	6.35	3.18	7	0.4	-		●										
	VCGT110300AZ7	Up-sharp edge	35	6.35	3.18	7	0.03	-				●			●					
	VCGT110301MAZ7	Up-sharp edge	35	6.35	3.18	7	0.08	-				●			●					
	VCGT110302MAZ7	Up-sharp edge	35	6.35	3.18	7	0.18	-				●			●					
	VCGT110304MAZ7	Up-sharp edge	35	6.35	3.18	7	0.38	-				●			●					
	VCGT110300RU	Up-sharp edge	35	6.35	3.18	7	0.03	-					●	●						
	VCGT110301MRU	Up-sharp edge	35	6.35	3.18	7	0.08	-			●									
	VCGT110301RU	Up-sharp edge	35	6.35	3.18	7	0.1	-					●	●						
	VCGT110302MRU	Up-sharp edge	35	6.35	3.18	7	0.18	-			●									
	VCGT110302RU	Up-sharp edge	35	6.35	3.18	7	0.2	-					●	●						
	VCET1103008RUHG	Up-sharp edge	35	6.35	3.18	7	0.08	-					●							
	VCGT1103005RU-WP	Up-sharp edge	35	6.35	3.18	7	0.05	(0.2)					●	●						
	VCGT110301RU-WP	Up-sharp edge	35	6.35	3.18	7	0.1	(0.2)					●	●						
	VCGT1103005RSX-WP	Ⓜ Up-sharp edge	35	6.35	3.18	7	0.05	(0.2)					●	●						
	VCGT110301RSX-WP	Ⓜ Up-sharp edge	35	6.35	3.18	7	0.1	(0.2)					●	●						
	VCGW110300H	Ⓜ Up-sharp edge	35	6.35	3.18	7	0.03	-								●				
	VCGW110301H	Ⓜ Up-sharp edge	35	6.35	3.18	7	0.1	-								●				
	VCGW110302H	Ⓜ Up-sharp edge	35	6.35	3.18	7	0.2	-								●				

Features of VCGT-WP insert



NTK WP style inserts have a wiper facet design.

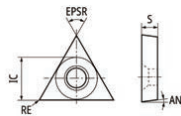
The insert has a 0.2mm flat on the cutting edge when the insert is set into the toolholder.

The flat on the cutting edge ensures a superior surface when feed rates are increased.

WP style inserts can be used in toolholders: SVAC

TP.. series/Inserts Carbide

TPGH



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

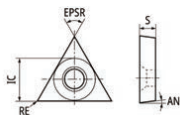
Shape	Item Number	CECC	Carbide																	Uncoated
			EPSR	IC	S	AN	RE	BS	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	CVD	CVD		
	(ISO)	°	mm	mm	°	mm	mm	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	CP1	CP7	KM1			
	TPGH090202RFG	Up-sharp edge	60	5.56	2.38	11	0.2	-	●			●	●							
	TPGH090204RFG	Up-sharp edge	60	5.56	2.38	11	0.4	-	●			●	●							
	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	-				●		●						

Back Turning

R

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	
			°	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	-					●		●				

Back Turning
R