TYcarb

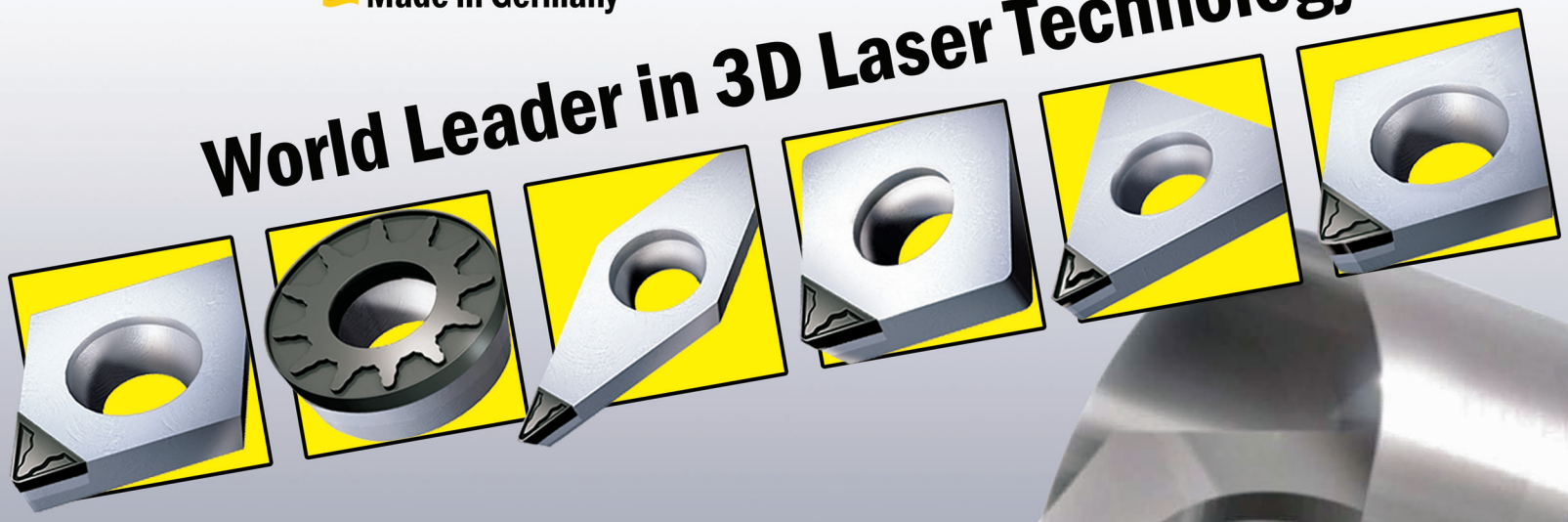
Advanced Cutting Materials

Made in Germany

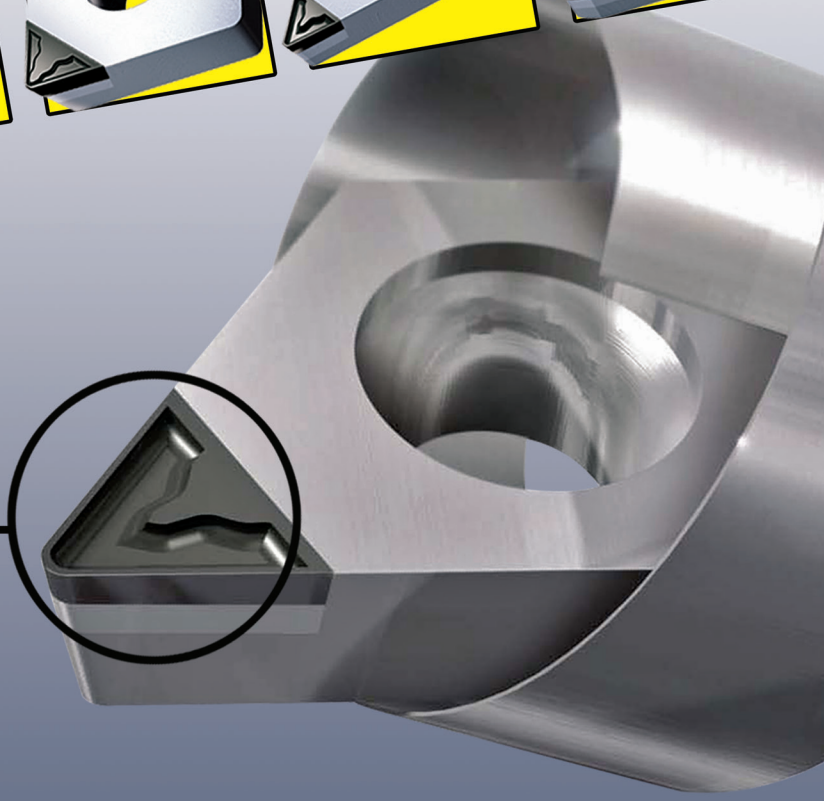
PCD Diamond

ChipBreaking Revolution

World Leader in 3D Laser Technology



- Unsurpassed chip control and dramatically increased tool life
- Low cutting pressure results in minimal heat expansion
- True 3D PCD chipbreaker forms produced at the cutting point
- Increased productivity and reduced operating costs
- Superior edge grind produces excellent surface finishes



LARGEST STANDARD OFFERING OF PCD DIAMOND CHIPBREAKER INSERTS IN NORTH AMERICA

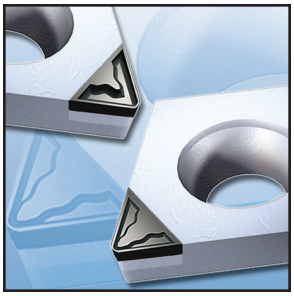
PCD / TFC Technical Information

TyCarb Designation	ISO Designation	Description	Application
Diamond Grades			
TFC	PD	Solid polycrystalline CVD-diamond without binder and without carbide reinforcement, perfect cutting edge sharpness and cutting edges without any microdamage. No cutting pressure and smallest tolerances. Highest wear resistance and very high thermal conductivity (HSC and HPC), higher toughness.	From super-finishing to semi-finishing of all non-ferrous metals and non-ferrous composites with high content of abrasive reinforcement or silicon.
PDC	DP Compound	Polycrystalline diamond (compound cutting material), carbide reinforced diamond of fine grit size, good cutting edge sharpness and low cutting pressure allowing for minor tolerances. Lower wear resistance at higher toughness.	Finishing of all non-ferrous metals and non-metallics with low content of abrasive reinforcement or silicon.
PDC-S	DP Compound	Polycrystalline diamond (compound cutting material), carbide reinforced diamond of coarse grit size, good edge sharpness and low cutting pressure allowing for minor tolerances. Ideal for milling. Lower wear resistance at higher toughness.	Finishing and milling of all non-ferrous and non-metallics with medium content of abrasive reinforcement or silicon.
PDC-CU-S	DP Compound	Solid polycrystalline diamond (compound cutting material) without carbide reinforcement, coarse grit size, good cutting edge sharpness and low cutting pressure allowing for minor tolerances. Well suited for milling tools with high depth of cut. High wear resistance at higher toughness due to large diamond volume.	Finishing and milling of all non-ferrous metals and non-metallics with high content of abrasive reinforcement or silicon.

Chipbreaker Designation	Application	Radius	D.O.C. (ap) Min. - Max.	FEED (ipr) Min. - Max.
Chipbreaker Cutting Information				
CB1	Medium to finish machining with low cutting forces for low burr, high tolerance, high surface quality.	.004"	.002" - .012"	.0008" - .002"
		.008"	.0025" - .016"	.0011" - .003"
		.016"	.004" - .032"	.003" - .006"
		.031"	.006" - .040"	.003" - .008"
		.047"	.012" - .060"	.0045" - .010"
CB2	General purpose machining. Strong, sharp cutting edge for high depths of cut and feed rates producing good surface quality.	.004"	--	--
		.008"	.020" - .032"	.003" - .005"
		.016"	.024" - .060"	.003" - .008"
		.031"	.028" - .060"	.006" - .012"
		.047"	.032" - .080"	.008" - .016"
CB3	Semi-Roughing to roughing. Serrated edge for superior chip control at high feeds and depths of cut. When using CB3 chipbreaker coolant is required.	.004"	-	-
		.008"	-	-
		.016"	.040" - .120"	.008" - .014"
		.031"	.040" - .120"	.008" - .014"
		.047"	.040" - .120"	.008" - .014"

Speed Information	TFC (Vc : SFM)	PDC (Vc : SFM)	PDC-S (Vc : SFM)	PDC-CU-S (Vc : SFM)
Materials				
Non-ferrous metals, aluminum alloys without silicon	1600 - 15000	1300 - 8000	1300 - 8000	1300 - 8000
Non-ferrous metals, aluminum alloys with less than 12% silicon	1300 - 11000	1300 - 6500	1950 - 6500	1950 - 6500
Non-ferrous metals, aluminum alloys with more than 12 % silicon	1300 - 6000	--	1300 - 4800	1300 - 4800
Brass, bronze, copper, copper alloys, precious metals	1300 - 7000	975 - 5800	975 - 5500	975 - 5500
Non-metallics, pure plastics without reinforcements	1300 - 6000	975 - 3900	--	--
Non-metallics, plastics with reinforcements	650 - 4500	--	650 - 3000	650 - 3000

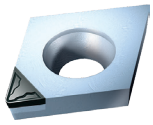
PCD / TFC Laser Chipbreaker Program

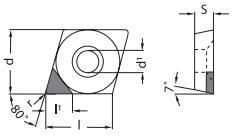


TyCarb introduces revolutionary 3D PCD chipbreaking technology for the machining of non-ferrous materials. Through the use of advanced proprietary technology, true 3D PCD chipbreaker forms are produced at the cutting point of the PCD segment. The performance results of this dramatic innovation, which is available in roughing and finishing forms, are unsurpassed chip control and dramatically increased tool life. The higher shear angles integrated within the chipbreaker produces lower cutting pressures and less heat expansion of the workpiece.

The by-product of this machining dynamic is precise dimensional accuracy, eliminating the need for secondary operations while both increasing productivity and reducing operating costs. The controlled short chips coming off the workpiece allow for uninterrupted production runs and practically eliminates costly maintenance stoppages traditionally required when clearing machines of long uncontrolled swarf.

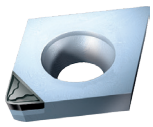
CCGT-CB1 Positive Neutral (with Chip Control)

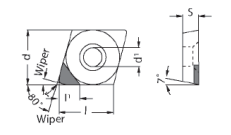




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.50.5-CB1	.250	.110	.094	.254	.134	.094	.008	■	■		
CCGT-21.51-CB1					.126	.087	.016	■	■		
CCGT-21.52-CB1					.118	.079	.031	■	■		
CCGT-32.50.5-CB1	.375	.173	.156	.382	.177	--	.008		■		
CCGT-32.51-CB1					.169	.087	.016	■	■		
CCGT-32.52-CB1					.161	--	.031		■		
CCGT-431-CB1	.500	.217	.187	.508	.169	--	.016		■		
CCGT-432-CB1					.161	--	.031		■		

CCGT-CB1 Positive Neutral Wiper (with Chip Control)

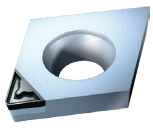


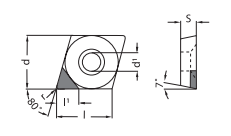


Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.50.5W-CB1*	.250	.110	.094	.254	.134	--	.008	■			
CCGT-21.51W-CB1*					.130	.083	.016	■	■		
CCGT-32.50.5W-CB1*	.375	.173	.156	.382	.173	--	.008		■		
CCGT-32.51W-CB1*					.165	.083	.016	■	■		
CCGT-430.5W-CB1*	.500	.217	.187	.508	.173	.091	.008	■			
CCGT-431W-CB1*					.165	.083	.016	■	■		

***Wiper= 95° Holder**

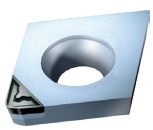
CCGT-CB2 Positive Neutral (with Chip Control)

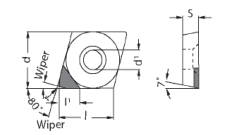




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.50.5-CB2	.250	.110	.094	.254	.134	.094	.008	■		■	
CCGT-21.51-CB2					.126	.087	.016	■	■	■	
CCGT-21.52-CB2					.118	.079	.031	■		■	
CCGT-32.50.5-CB2	.375	.173	.156	.382	.177	.094	.008	■		■	
CCGT-32.51-CB2					.169	.087	.016	■		■	
CCGT-32.52-CB2					.161	.079	.031	■		■	
CCGT-431-CB2	.500	.217	.187	.508	.169	.087	.016	■		■	
CCGT-432-CB2					.161	.079	.031	■		■	

CCGT-CB2 Positive Neutral Wiper (with Chip Control)



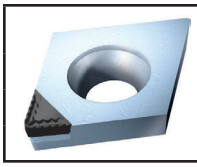


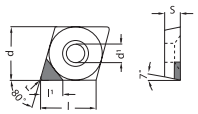
Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.50.5W-CB2*	.250	.110	.094	.254	.134	.098	.008	■	■	■	
CCGT-21.51W-CB2*					.130	.091	.016	■	■	■	
CCGT-32.50.5W-CB2*	.375	.173	.156	.382	.173	.091	.008	■	■	■	
CCGT-32.51W-CB2*					.165	.083	.016	■	■	■	
CCGT-430.5W-CB2*	.500	.217	.187	.508	.173	.091	.008	■	■	■	
CCGT-431W-CB2*					.165	.083	.016	■	■	■	

***Wiper= 95° Holder**

PCD / TFC Laser Chipbreaker Program

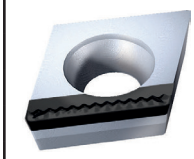
CCGT-CB3 Positive Neutral (with Chip Control)

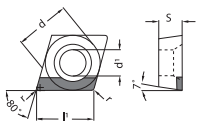




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.51-CB3	.250	.110	.094	.254	.126	--	.016				■
CCGT-32.51-CB3	.375	.173	.156	.382	.169	--	.016				■
CCGT-32.52-CB3					.161	--	.031				■

CCGT-GS-CB1 Positive Neutral (with Chip Control)

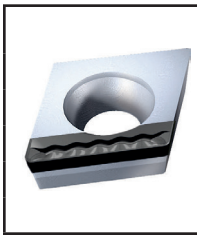


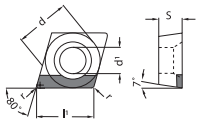


Designation	d	d¹	s	l	l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.51L-GS-CB1	.250	.110	.094	--	.254	.016			■	
CCGT-21.51R-GS-CB1									■	
CCGT-21.52L-GS-CB1					.254	.031			■	
CCGT-21.52R-GS-CB1									■	

Right hand shown

CCGT-GS-CB2 Positive Neutral (whole edge with chip control)

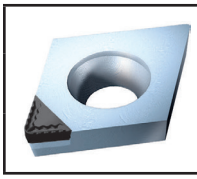


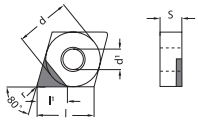


Designation	d	d¹	s	l	l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CCGT-21.52L-GS-CB2	.250	.110	.094	--	.254	.016			■	
CCGT-21.52R-GS-CB2									■	
CCGT-32.51L-GS-CB2	.375	.173	.156	--	.382	.016			■	
CCGT-32.52L-GS-CB2					.382	.031			■	
CCGT-32.52R-GS-CB2									■	

Right hand shown

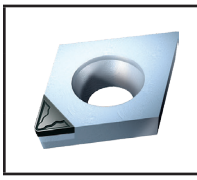
CNGA-CB3 Negative (with Chip Control)

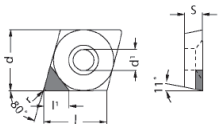




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CNGA-432-CB3	.500	.202	.187	.508	.236	--	.031				■
CNGA-433-CB3					.224	--	.047				■

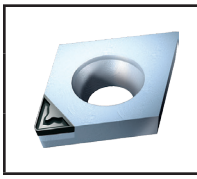
CPGT-CB1 Positive Neutral (with Chip Control)

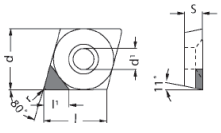




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CPGT-21.50.5-CB1	.250	.110	.094	.254	.134	--	.008		■		
CPGT-21.51-CB1					.126	--	.016		■		

CPGT-CB2 Positive Neutral (with Chip Control)

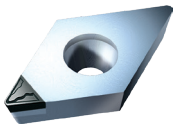


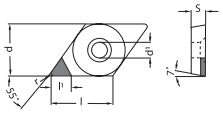


Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
CPGT-21.50.5-CB2	.250	.110	.094	.254	.134	--	.008		■	■	
CPGT-21.51-CB2					.126	--	.016		■	■	

PCD / TFC Laser Chipbreaker Program

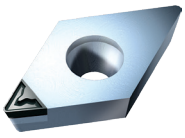
DCGT-CB1 Positive Neutral (with Chip Control)

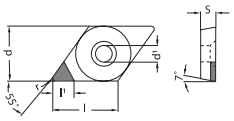




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
DCGT-21.50-CB1	.250	.110	.094	.305	.150	--	.004		■	■	
DCGT-21.50.5-CB1					.146	.102	.008	■	■	■	■
DCGT-21.51-CB1					.134	.091	.016	■	■	■	■
DCGT-21.52-CB1					.118	.079	.031	■	■		
DCGT-32.50-CB1	.375	.173	.156	.457	.189	--	.004		■	■	
DCGT-32.50.5-CB1					.185	.102	.008	■	■	■	
DCGT-32.51-CB1					.169	.091	.016	■	■	■	■
DCGT-32.52-CB1					.157	.079	.031	■	■	■	■

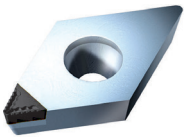
DCGT-CB2 Positive Neutral (with Chip Control)

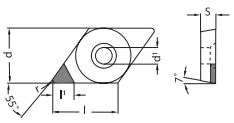




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
DCGT-21.50-CB2	.250	.110	.094	.305	.150	--	.004			■	
DCGT-21.50.5-CB2					.146	.102	.008	■		■	■
DCGT-21.51-CB2					.134	.091	.016	■		■	■
DCGT-21.52-CB2					.118	.079	.031	■		■	
DCGT-32.50-CB2	.375	.173	.156	.457	.189	--	.004			■	
DCGT-32.50.5-CB2					.185	.102	.008	■		■	
DCGT-32.51-CB2					.169	.091	.016	■		■	■
DCGT-32.52-CB2					.157	.079	.031	■	■	■	■

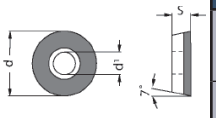
DCGT-CB3 Positive Neutral (with Chip Control)





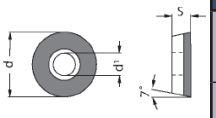
Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
DCGT-21.51-CB3	.250	.110	.094	.305	.134	--	.016				■
DCGT-32.51-CB3	.375	.173	.156	.457	.169	--	.016				■
DCGT-32.52-CB3					.157	--	.031				■

RCGT-CB1 Fullface (with Chip Control)



Designation	d	d¹	s	l	PDC	TFC	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
RCGT-0602MO-VM-CB1	.236	.110	.094	--	FULL	--	--		■	■	
RCGT-10T3MO-VM-CB1	.394	.173	.156	--	FULL	--	--		■	■	

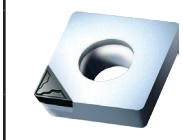
RCGT-CB2 Fullface (with Chip Control)

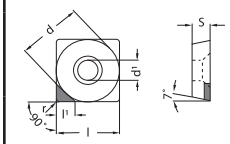


Designation	d	d¹	s	l	PDC	TFC	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
RCGT-0602MO-VM-CB2	.236	.110	.094	--	FULL	--	--			■	
RCGT-10T3MO-VM-CB2	.394	.173	.156	--	FULL	--	--			■	

PCD / TFC Laser Chipbreaker Program

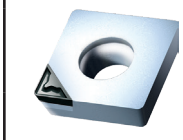
SCGT-CB1 Positive Neutral (with Chip Control)

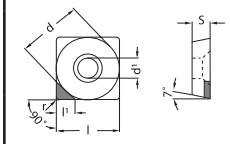




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
SCGT-32.51-CB1	.375	.173	.156	.375	.173	.110	.016	■	■		
SCGT-32.52-CB1					.169	.102	.031	■	■		

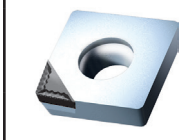
SCGT-CB2 Positive Neutral (with Chip Control)

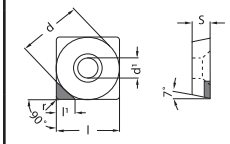




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
SCGT-32.51-CB2	.375	.173	.156	.375	.173	.110	.016	■		■	
SCGT-32.52-CB2					.169	.102	.031	■		■	

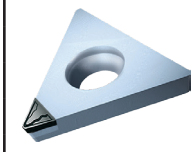
SCGT-CB3 Positive Neutral (with Chip Control)

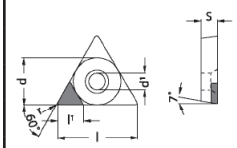




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
SCGT-32.51-CB3	.375	.173	.156	.375	.173	--	.016				■
SCGT-32.52-CB3					.169	--	.031				■

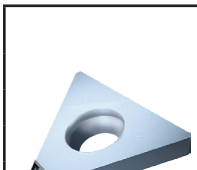
TCGT-CB1 Positive Neutral (with Chip Control)

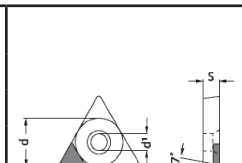




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
TCGT-1.81.50.5-CB1	.219	.098	.094	.378	.146	.102	.008	■	■		
TCGT-1.81.51-CB1					.134	.091	.016	■	■		
TCGT-21.50.5-CB1	.250	.110	.094	.433	.146	.102	.008	■	■		
TCGT-21.51-CB1					.134	.091	.016	■	■		
TCGT-32.51-CB1	.375	.173	.156	.650	.181	.091	.016	■	■		
TCGT-32.52-CB1					.165	.079	.031	■	■		

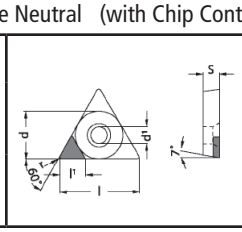
TCGT-CB2 Positive Neutral (with Chip Control)





Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
TCGT-1.81.50.5-CB2	.219	.098	.094	.378	.146	.102	.008	■		■	
TCGT-1.81.51-CB2					.134	.091	.016	■		■	
TCGT-21.50.5-CB2	.250	.110	.094	.433	.146	.102	.008	■		■	
TCGT-21.51-CB2					.134	.091	.016	■		■	
TCGT-32.51-CB2	.375	.173	.156	.650	.181	.091	.016	■		■	
TCGT-32.52-CB2					.165	.079	.031	■		■	

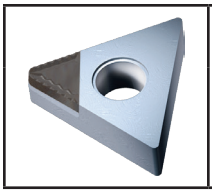
TCGT-CB3 Positive Neutral (with Chip Control)

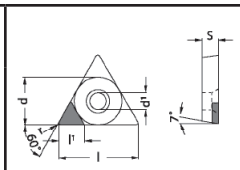


Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
TCGT-21.51-CB3	.250	.110	.094	.433	.134	--	.016				■
TCGT-32.52-CB3	.375	.173	.156	.650	.165	--	.031				■

PCD / TFC Laser Chipbreaker Program

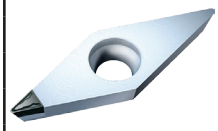
TNGA-CB3 Negative (with Chip Control)

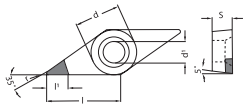




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
TNGA-332-CB3	.374	.150	.187	.650	.228	--	.031				■

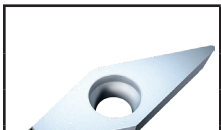
VBGT-CB1 Positive Neutral (with Chip Control)

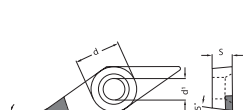




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VBGT-330.5-CB1	.375	.173	.187	.654	.232	.118	.008	■	■		■
VBGT-331-CB1					.217	.118	.016	■	■	■	
VBGT-332-CB1					.197	.118	.031	■	■	■	
VBGT-333-CB1					.173	.118	.047	■	■	■	

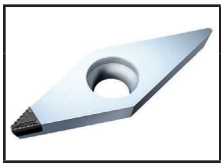
VBGT-CB2 Positive Neutral (with Chip Control)

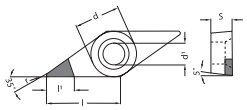




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VBGT-330.5-CB2	.375	.173	.187	.654	.232	.118	.008	■		■	
VBGT-331-CB2					.217	.118	.016	■		■	■
VBGT-332-CB2					.197	.118	.031	■		■	■
VBGT-333-CB2					.173	.118	.047	■		■	

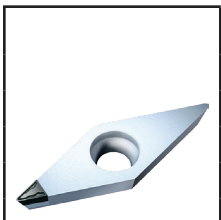
VBGT-CB3 Positive Neutral (with Chip Control)

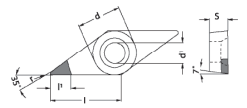




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VBGT-331-CB3	.375	.173	.187	.654	.217	--	.016				■

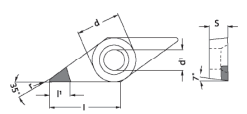
VCGT-CB1 Positive Neutral (with Chip Control)





Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VCGT-220-CB1	.250	.114	.125	.437	.213	.118	.004	■	■		
VCGT-220.5-CB1					.181	.118	.008	■	■	■	
VCGT-221-CB1					.154	.118	.016	■	■	■	
VCGT-330.5-CB1	.375	.173	.187	.654	.232	.118	.008	■	■		
VCGT-331-CB1					.217	.118	.016	■	■	■	
VCGT-332-CB1					.197	.118	.031	■	■	■	
VCGT-333-CB1					.177	.118	.047	■	■	■	

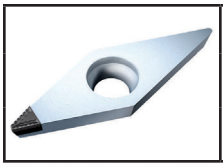
VCGT-CB2 Positive Neutral (with Chip Control)

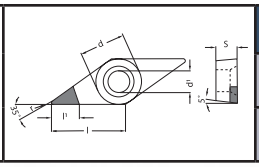


Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VCGT-220.5-CB2	.250	.114	.125	.437	.181	.118	.008	■		■	■
VCGT-221-CB2					.154	.118	.016	■		■	■
VCGT-222-CB2					.130	.118	.031	■		■	
VCGT-330.5-CB2	.375	.173	.187	.654	.232	.118	.008	■		■	■
VCGT-331-CB2					.217	.118	.016	■		■	■
VCGT-332-CB2					.197	.118	.031	■		■	
VCGT-333-CB2					.177	.118	.047	■		■	

PCD / TFC Laser Chipbreaker Program

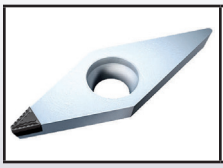
VCGT-CB3 Positive Neutral (with Chip Control)

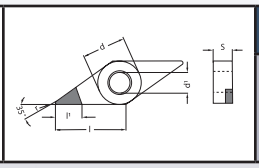




Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VCGT-221-CB3	.250	.114	.125	.437	.154	--	.016				■
VCGT-331-CB3	.375	.173	.187	.654	.217	--	.016				■

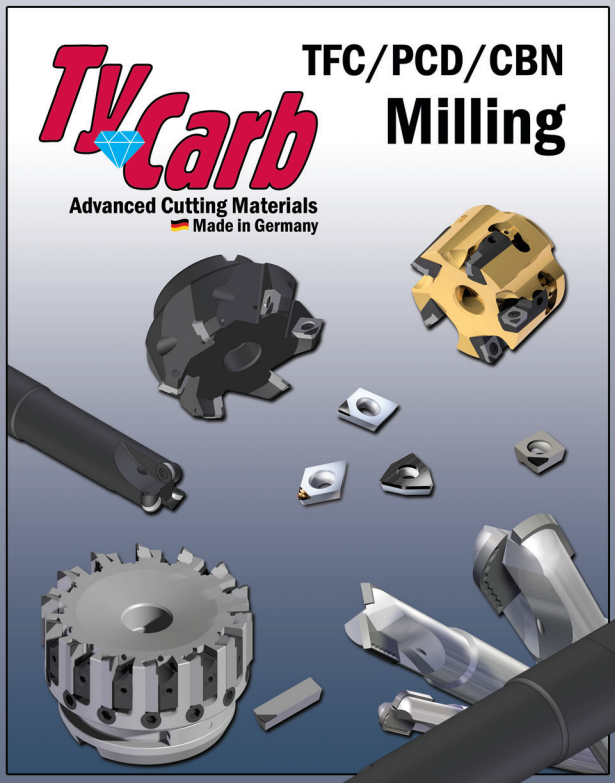
VNGA-CB3 Negative (with Chip Control)





Designation	d	d¹	s	l	PDC l¹	TFC l¹	r	TFC PD	PDC DP	PDC-S DP	PDC-CU-S DP
VNGA-332-CB3	.375	.150	.187	.654	.193	--	.031				■

Other PCD/CBN products available from TyCarb



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