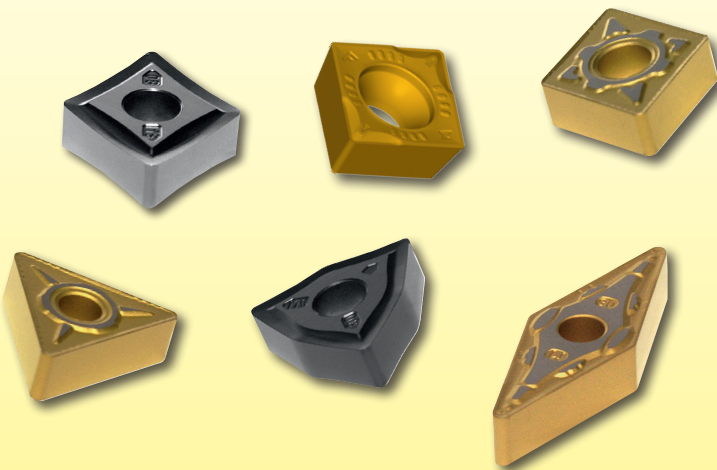


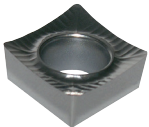



INDEXABLE TURNING INSERTS

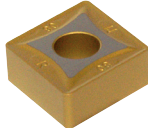
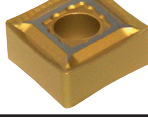
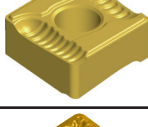
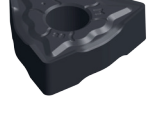
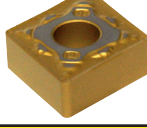
- Full range of turning inserts for machining a wide variety of materials
- Finely tuned edge and chip geometries for outstanding performance and tool-life
- Latest nano-lock MT-CVD coatings and Hyper-PVD coatings for high production environments
- Many grade choices for roughing to fine finishing of all materials



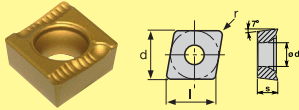
Positive 7° Inserts

	RAL DOC 0.012" - 0.315" FPR 0.003" - 0.029" Main chipbreaker for aluminum, brass, copper etc. Up-sharp polished edges delivers high shearing action and reduces built up edge. May also be used for light finishing in stainless steel and titanium alloys.
	SCT DOC 0.040" - 0.157" FPR 0.008" - 0.025" Copy turning and medium machining of low carbon, tool, alloy and stainless steel
	TMF DOC 0.006" - 0.010" FPR 0.002" - 0.011" Finishing geometry for steel and stainless in the ISO positive style inserts. Produces excellent finishes at light depth of cut and feeds.
	TMM DOC 0.040" - 0.157" FPR 0.006" - .018" The new TMM geometry has been designed as a universal turning chip control form for Austenitic Stainless steel material.
	TMU DOC 0.030" - 0.315" FPR 0.006" - .020" Semi-finish to medium turning of low carbon, tool and alloy steel

Negative PinLock Inserts

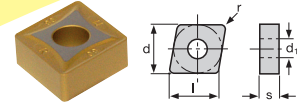
	GR DOC .050" - .354" FPR .010" - .039" Medium to heavy roughing of low carbon, tool and alloys steels
	HTM DOC .040" - .130" FPR .004" - .014" Medium duty machining of difficult to machine materials including chrome and nickel based alloys
	MFM DOC .020" - .157" FPR .003" - .016" Finishing to medium turning of low carbon, tool and alloy steels
	STU DOC .040" - .157" FPR .008" - .025" Copy turning and medium roughing of all steels including stainless steel and exotic materials
	SCT DOC .040" - .157" FPR .008" - .025" Copy turning and medium roughing of all steels including 300 series stainless
	TMF DOC .010" - .085" FPR .002" - .011" Finishing geometry for steel and stainless in the ISO positive style inserts. Produces excellent finishes at light depth of cut and feeds.
	TMM DOC .040" - .157" FPR .006" - .018" The new TMM geometry has been designed as a universal turning chip control form for Austenitic Stainless steel material. Now incorporating a "Chip Impact Protector" to ensure smooth chip flow and prevent insert edge chipping.
	TMU DOC .030" - .315" FPR .006" - .020" Medium to roughing of low carbon, tool and alloy steels

CCGT...-SCT



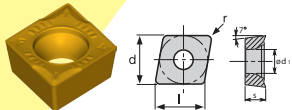
Designation	d	s	r	RP15K	RP25TC	RP40K	RM35D
CCGT-21.51L-SCT	1/4	.094	1/64	●	●	●	●
CCGT-21.51R-SCT			●	●	●	●	
CCGT-21.52L-SCT			●	●	●	●	
CCGT-21.52R-SCT	3/8	.156	1/32	●	●	●	●
CCGT-32.51L-SCT			●	●	●	●	
CCGT-32.51R-SCT			●	●	●	●	
CCGT-32.52L-SCT			●	●	●	●	
CCGT-32.52R-SCT			1/32	●	●	●	●

CNMG...-GR



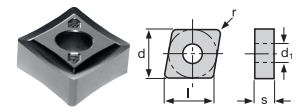
Designation	d	s	r	RP15TC	RP25TC	RP40K	RK20
CNMG-432-GR	1/2	.187	1/32	●	●	●	●
CNMG-433-GR			3/64	●	●	●	●
CNMG-434-GR			1/16	●	●	●	●
CNMG-542-GR	5/8	.250	1/32	●	●	●	●
CNMG-543-GR			3/64	●	●	●	●
CNMG-544-GR			1/16	●	●	●	●
CNMG-643-GR	3/4	.250	3/64	●	●	●	●
CNMG-644-GR			1/16	●	●	●	●
CNMG-646-GR			3/32	●	●	●	●

CCMT...-TMF



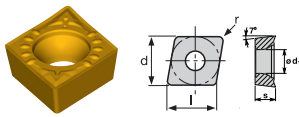
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K	RM35D
CCMT-21.51-TMF	.252	1/4	.094	.110	1/64	●	●		
CCMT-21.52-TMF					1/32	●	●		
CCMT-32.51-TMF	.381	3/8	.156	.173	1/64	●	●		
CCMT-32.52-TMF					1/32	●	●		
CCMT-431-TMF	.504	1/2	.187	.217	1/64	●	●		

CNMG...-HTM



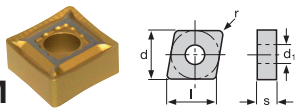
Designation	d	s	r	RP15TC	RP25TC	RM20TC	AS15
CNMG-431-HTM	1/2	.187	1/64			●	●
CNMG-432-HTM			1/32		●	●	
CNMG-433-HTM			3/64			●	

CCMT...-TMU



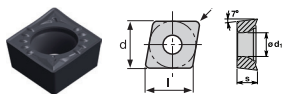
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
CCMT-21.50.5-TMU	1/4	.094	.008	●	●		
CCMT-21.51-TMU			1/64	●	●		
CCMT-21.52-TMU			1/32	●	●		
CCMT-32.51-TMU	3/8	.156	1/64	●	●		
CCMT-32.52-TMU			1/32	●	●		

CNMG...-MFM



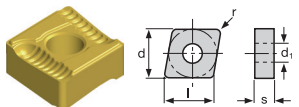
Designation	d	s	r	RP15TC	RP25TC	RP40K	RK20
CNMG-431-MFM	1/2	.187	1/64	●	●	●	●
CNMG-432-MFM			1/32	●	●	●	●

CCMT...-TMM



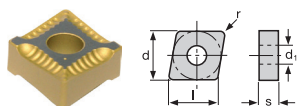
Designation	d	s	r	RP15TC	RP25TC	RM20TC	RM35D
CCMT-32.51-TMM	3/8	.156	1/64			●	
CCMT-32.52-TMM			1/32		●		

CNMG...-SCT



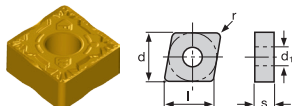
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
CNMG-431L-SCT	1/2	.187	1/64		●	●	●
CNMG-431R-SCT			●	●	●		
CNMG-432L-SCT			1/32	●	●	●	
CNMG-432R-SCT	3/4	.250	1/32		●	●	●
CNMG-433L-SCT			●	●	●		
CNMG-433R-SCT			3/64	●	●	●	

CNMG...-TMF



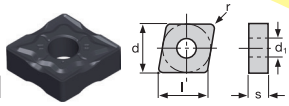
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K	RM35D
CNMG-431-TMF	.504	1/2	.187	.203	1/64	●	●		
CNMG-432-TMF					1/32	●	●		

CNMG...-TMF



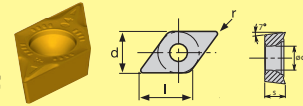
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K	RM35D
CNMG-431-TMF	.504	1/2	.187	.203	1/64	●	●		
CNMG-432-TMF					1/32	●	●		

CNMG...-TMM



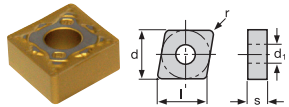
Designation	d	s	r	RP15TC	RP25TC	RM20TC	RM35D
CNMG-432-TMM	1/2	.187	1/32			●	
CNMG-433-TMM			3/64			●	

DCMT...-TMF



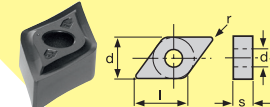
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K
DCMT-21.51-TMF	.305	1/4	.094	.148	1/64	●	●	
DCMT-32.51-TMF	.457	3/8	.156	.173	1/64	●	●	

CNMG...-TMU



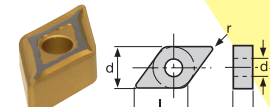
Designation	d	s	r	RP15TC	RP25TC	RP40K
CNMG-432-TMU			1/32	●	●	●
CNMG-433-TMU	1/2	.187	3/64	●	●	●
CNMG-434-TMU			1/16	●	●	●
CNMG-542-TMU			1/32	●	●	●
CNMG-543-TMU	5/8	.250	3/64	●	●	●
CNMG-544-TMU			1/16	●	●	●
CNMG-643-TMU	3/4	.250	3/64	●	●	●
CNMG-644-TMU			1/16	●	●	●

DNMG...-HTM



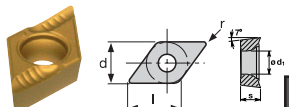
Designation	d	s	r	RP15TC	RP25TC	RP40K	AS15
DNMG-431-HTM			1/64				●
DNMG-432-HTM	1/2	.187	1/32				●
DNMG-433-HTM			3/64				●

DNMG...-MFM



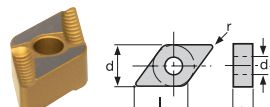
Designation	d	s	r	RP15TC	RP25TC	RP40K	RK10
DNMG-331-MFM	3/8	.187	1/64	●	●	●	●
DNMG-332-MFM			1/32	●	●		●
DNMG-432-MFM	1/2	.187	1/32		●		

DCGT...-SCT



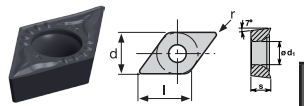
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
DCGT-21.51L-SCT	1/4	.094	1/64		●	●	●
DCGT-21.51R-SCT					●	●	●
DCGT-32.51L-SCT			1/64		●	●	●
DCGT-32.51R-SCT	3/8	.156			●	●	●
DCGT-32.52L-SCT			1/32	●	●	●	●
DCGT-32.52R-SCT				●	●	●	

DNMG...-SCT



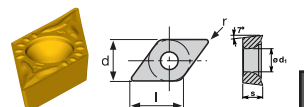
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
DNMG-331L-SCT			1/64	●	●	●	
DNMG-331R-SCT	3/8	.187		●	●	●	
DNMG-332L-SCT			1/32	●	●	●	
DNMG-332R-SCT				●	●	●	
DNMG-431L-SCT			1/64				●
DNMG-431R-SCT	1/2	.187			●	●	●
DNMG-432L-SCT			1/32		●	●	●
DNMG-432R-SCT					●	●	●

DCMT...-TMM



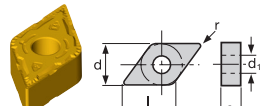
Designation	d	s	r	RP15TC	RP25TC	RM20TC	RM35D
DCMT-32.51-TMM	3/8	.156	1/64			●	
DCMT-32.52-TMM			1/32			●	

DCMT...-TMU



Designation	d	s	r	RP15TC	RP25TC
DCMT-21.51-TMU	1/4	.094	1/64	●	●
DCMT-32.51-TMU			1/64	●	●
DCMT-32.52-TMU	3/8	.156	1/32	●	●

DNMG...-TMF

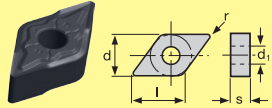


Designation	l	d	s	d ¹	r	RP15TC	RP25TC
DNMG-331-TMF					1/64	●	●
DNMG-332-TMF	.457	3/8	.187	.156	1/32	●	●
DNMG-431-TMF	.610	1/2	.187	.203	1/64	●	●
DNMG-432-TMF					1/32	●	●
DNMG-441-TMF	.610	1/2	.250	.203	1/64	●	●
DNMG-442-TMF					1/32	●	●



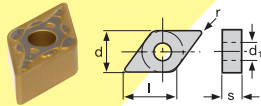
INDEXABLE TURNING INSERTS

DNMG-...-TMM



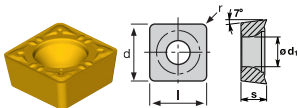
Designation	d	s	r	RP15TC	RP25TC	RM20TC	RM35D
DNMG-432-TMM	1/2	.187	1/32			●	
DNMG-442-TMM	1/2	.250	1/32			●	
DNMG-443-TMM	1/2	.250	3/64			●	

DNMG-...-TMU



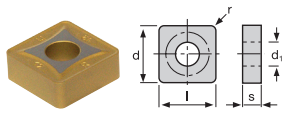
Designation	d	s	r	RP15TC	RP25TC	RP40K	
DNMG-332-TMU	3/8	.187	1/32	●	●	●	
DNMG-432-TMU	1/2	.187	1/32	●	●	●	
DNMG-433-TMU	1/2	.187	3/64	●	●	●	

SCMT-...-TMU



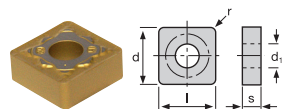
Designation	d	s	r	RP15TC	RP25TC	RP40K	
SCMT-32.52-TMU	3/8	.156	1/32	●	●		
SCMT-432-TMU	1/2	.187	1/32	●	●		
SCMT-433-TMU	1/2	.187	3/64	●	●		

SNMG-...-GR



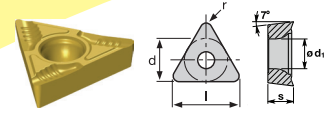
Designation	d	s	r	RP15TC	RP25TC	RP40K	
SNMG-432-GR	1/2	.187	1/32	●	●	●	
SNMG-433-GR	1/2	.187	3/64	●	●	●	
SNMG-643-GR	3/4	.250	3/64	●	●	●	
SNMG-644-GR	3/4	.250	1/16	●	●	●	

SNMG-...-TMU



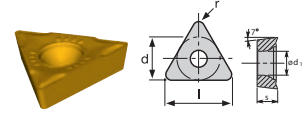
Designation	d	s	r	RP15TC	RP25TC	RP40K	
SNMG-432-TMU	1/2	.187	1/32	●	●	●	
SNMG-433-TMU	1/2	.187	3/64	●	●	●	
SNMG-542-TMU	5/8	.250	1/32	●	●	●	
SNMG-643-TMU	3/4	.250	3/64	●	●	●	

TCGT-...-SCT



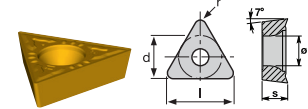
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
TCGT-21.51L-SCT	1/4	.094	1/64		●	●	●
TCGT-21.51R-SCT	1/4	.094	1/64		●	●	●
TCGT-32.51L-SCT	3/8	.156	1/64		●	●	●
TCGT-32.51R-SCT	3/8	.156	1/64		●	●	●
TCGT-32.52L-SCT	3/8	.156	1/32		●	●	●
TCGT-32.52R-SCT	3/8	.156	1/32		●	●	●

TCMT-...-TMF



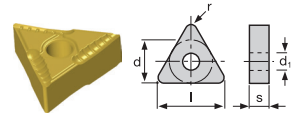
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K	
TCMT-21.50.5-TMF	.433	1/4	.094	.110	.008	●	●		
TCMT-21.51-TMF	.433	1/4	.094	.110	1/64	●	●		

TCMT-...-TMU



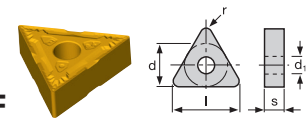
Designation	d	s	r	RP15TC	RP25TC	RP40K	
TCMT-21.51-TMU	1/4	.094	1/64	●	●		
TCMT-21.52-TMU	1/4	.094	1/32	●	●		
TCMT-32.51-TMU	3/8	.156	1/64	●	●		
TCMT-32.52-TMU	3/8	.156	1/32	●	●		

TNMG-...-SCT



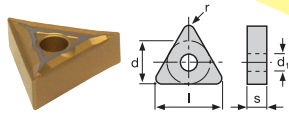
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
TNMG-331L-SCT	3/8	.187	1/64	●	●	●	●
TNMG-331R-SCT	3/8	.187	1/64	●	●	●	●
TNMG-332L-SCT	3/8	.187	1/32	●	●	●	●
TNMG-332R-SCT	3/8	.187	1/32	●	●	●	●

TNMG-...-TMF



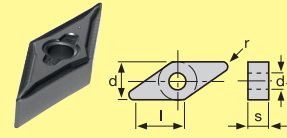
Designation	d	s	r	RP15TC	RP25TC	RP40K	
TNMG-331-TMF	3/8	.187	1/64	●	●		
TNMG-332-TMF	3/8	.187	1/32	●	●		

TNMG-...-MFM



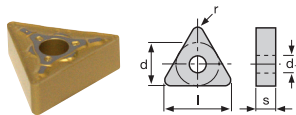
Designation	d	s	r	RP15TC	RP25TC	RP40K
TNMG-331-MFM			1/64	●	●	
TNMG-332-MFM	3/8	.187	1/32	●	●	
TNMG-333-MFM			3/64		●	

VNMG-...-HTF



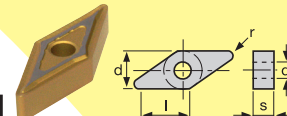
Designation	d	s	r	AS15		
VNMG-331-HTF			1/64	●		
VNMG-332-HTF	3/8	.187	1/32	●		

TNMG-...-TMU



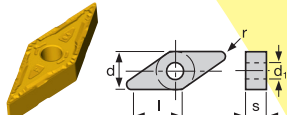
Designation	d	s	r	RP15TC	RP25TC	RP40K
TNMG-332-TMU			1/32	●	●	●
TNMG-333-TMU	3/8	.187	3/64	●	●	●
TNMG-334-TMU			1/16	●	●	●
TNMG-432-TMU			1/32	●	●	●
TNMG-433-TMU	1/2	.187	3/64	●	●	

VNMG-...-MFM



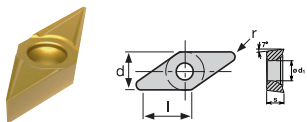
Designation	d	s	r	RP15TC	RP25TC	RP40K
VNMG-332-MFM	3/8	.187	1/32	●	●	

VNMG-...-TMF



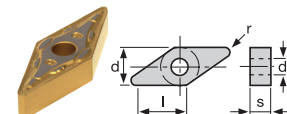
Designation	d	s	r	RP15TC	RP25TC	RP40K
VNMG-331-TMF			1/64	●	●	
VNMG-332-TMF	3/8	.187	1/32	●	●	

VBMT



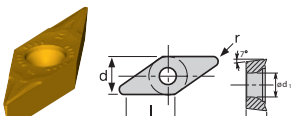
Designation	d	s	r	RP15TC	RP25TC	RP40K
VBMT-331			1/64	●	●	
VBMT-332	3/8	.187	1/32	●	●	
VBMT-333			3/64	●	●	

VNMG-...-TMU



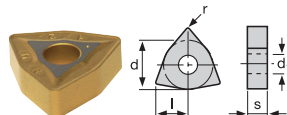
Designation	d	s	r	RP15TC	RP25TC	RP40K
VNMG-332-TMU			1/32	●	●	●
VNMG-333-TMU	3/8	.187	3/64	●	●	●

VCMT-...-TMF



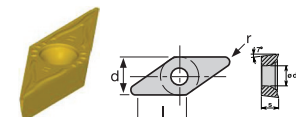
Designation	l	d	s	d ¹	r	RP15TC	RP25TC	RP40K
VCMT-221-TMF	.437	1/4	.125	.110	1/64	●	●	
VCMT-331-TMF					1/64	●	●	
VCMT-332-TMF	.653	3/8	.187	.173	1/32	●	●	

WNMG-...-GR



Designation	d	s	r	RP15TC	RP25TC	RP40K
WNMG-432-GR			1/32	●	●	●
WNMG-433-GR	1/2	.187	3/64	●	●	●
WNMG-434-GR			1/16	●	●	●

VCMT-...-TMU



Designation	d	s	r	RP15TC	RP25TC	RP40K
VCMT-331-TMU			1/64	●	●	
VCMT-332-TMU	3/8	.187	1/32	●	●	

WNMG-...-HTM

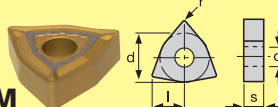


Designation	d	s	r	AS15		
WNMG-431-HTM			1/64	●		
WNMG-432-HTM	1/2	.187	1/32	●		
WNMG-433-HTM			3/64	●		



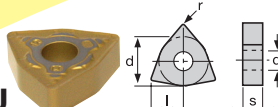
INDEXABLE TURNING INSERTS

WNMG-...-MFM



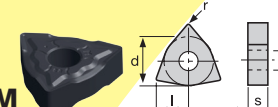
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
WNMG-331-MFM	3/8	.187	1/64	●	●	●	●
WNMG-332-MFM			1/32	●	●	●	●
WNMG-431-MFM	1/2	.187	1/64	●	●	●	●
WNMG-432-MFM			1/32	●	●	●	●
WNMG-433-MFM			3/64	●	●	●	●

WNMG-...-TMU



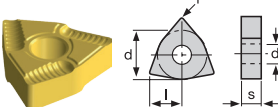
Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
WNMG-332-TMU	3/8	.187	1/32	●	●	●	●
WNMG-432-TMU			1/32	●	●	●	●
WNMG-433-TMU	1/2	.187	3/64	●	●	●	●
WNMG-434-TMU			1/16	●	●	●	●

WNMG-...-TMM



Designation	d	s	r	RP15TC	RP25TC	RM20TC	RM35D
WNMG-432-TMM	1/2	.187	1/32	●	●	●	●
WNMG-433-TMM			3/64	●	●	●	●

WNMG-...-SCT



Designation	d	s	r	RP15TC	RP25TC	RP40K	RM35D
WNMG-431L-SCT	1/2	.187	1/64	●	●	●	●
WNMG-431R-SCT				●	●	●	●
WNMG-432L-SCT	1/2	.187	1/32	●	●	●	●
WNMG-432R-SCT				●	●	●	●
WNMG-433L-SCT				●	●	●	●
WNMG-433R-SCT	1/2	.187	3/64	●	●	●	●
WNMG-433R-SCT				●	●	●	●

TURNING GRADES

RP15TC (HC-P15, HC-K15) Grade for highest cutting speeds for fine to medium turning, Vc = 590 - 980 SFM. Due to the special K coating this grade is extremely wear resistant. For continuous cut. As alternative, also applicable with cast iron.

RP25TC (HC-P25, HC-M25) (Universal Turning Grade.) Main grade for machining steel materials and easily machinable stainless steels at medium cutting speeds. Vc = 490 - 720 SFM, for light interrupted cut. This general purpose grade is characterized by the properties of high durability and excellent toughness across a wide range of applications.

RM20TC (HC-M20, HC-S20) This grade and the new TMM chip breaker with chip impact protector are perfect for high cutting speeds between 560 and 720 SFM. RM20TC ensures high stability against plastic deformation, even at high cutting feeds.

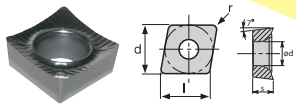
RP40K (HC-P35, HC-M35) A combination of an extremely tough carbide with the new "Nano MT-CVD layer". Guarantees maximum performance in heavy interrupted cutting. Vc = up to 490 SFM.

RM35D (HC-M35, HC-P35) Main grade for turning of austenitic stainless steels at medium to high cutting speeds, Vc = up to 490 SFM. Applicable also for super alloys.

RK10 (HC-K10) Cast iron turning grade for the area K10. Optimal for machining GG and GGG materials. Possible cutting speeds for GG up to Vc 1200 SFM. Perfectly suitable for dry machining.

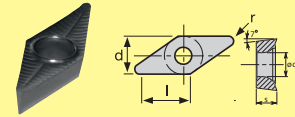
RK20 (HC-K15) Cast iron turning grade for the area K15. Optimal for machining GG and GGG materials. Possible cutting speeds for GG up to Vc 1200 SFM. Perfectly suitable for dry machining.

AS15 (HC-S15, HC-M15) Special submicron grade for machining super alloys such as Inconel, Titanium, etc., particularly suitable for interrupted cut. Also suitable for austenitic stainless steel, Vc approx. 100 - 200 SFM.



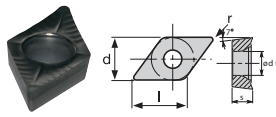
CCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
CCGT-21.50.5-RAL	.252	1/4	.094	.110	.008	●	●		
CCGT-21.51-RAL					1/64	●	●		
CCGT-32.50.5-RAL					.008	●	●		
CCGT-32.51-RAL	.382	3/8	.156	.173	1/64	●	●		
CCGT-32.52-RAL					1/32	●	●		
CCGT-431-RAL	.504	1/2	.187	.217	1/64	●	●		
CCGT-432-RAL					1/32	●	●		



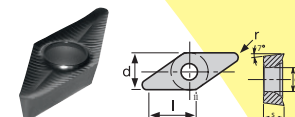
VCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
VCGT-220.5-RAL	.437	1/4	.125	.110	.008	●	●		
VCGT-221-RAL					1/64	●	●		
VCGT-330.5-RAL					.008	●	●		
VCGT-331-RAL	.654	3/8	.187	.173	1/64	●	●		
VCGT-332-RAL					1/32	●	●		
VCGT-333-RAL					3/64	●	●		
VCGT-43.58-RAL	.870	1/2	.219	.217	.118	●	●		



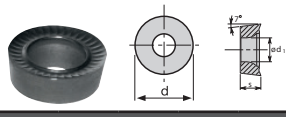
DCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
DCGT-21.50.5-RAL	.305	1/4	.094	.148	.008	●	●		
DCGT-21.51-RAL					1/64	●	●		
DCGT-32.50.5-RAL					.008	●	●		
DCGT-32.51-RAL	.457	3/8	.156	.173	1/64	●	●		
DCGT-32.52-RAL					1/32	●	●		



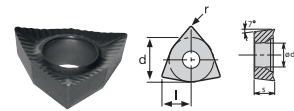
VPGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
VPGT-43.54-RAL	.870	1/2	.219	.217	1/16	●	●		



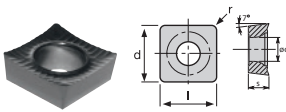
RCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
RCGT-0602MO-RAL	--	6mm	.094	.110	--	●	●		
RCGT-0803MO-RAL	--	8mm	.125	.134	--	●	●		
RCGT-1003MO-RAL	--	10mm	.125	.157	--	●	●		



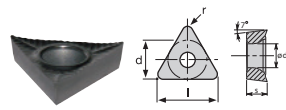
WCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
WCGT-32.50.5-RAL					.008	●	●		
WCGT-32.51-RAL	.256	3/8	.156	.173	1/64	●	●		
WCGT-32.52-RAL					1/32	●	●		
WCGT-431-RAL	.339	1/2	.187	.217	1/64	●	●		
WCGT-432-RAL					1/32	●	●		



SCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
SCGT-432-RAL	.500	1/2	.187	.217	1/32	●	●		



TCGT---RAL

Designation	l	d	s	d'	r	RTK20	TK10MP		
TCGT-21.51-RAL	.433	1/4	.094	.110	1/64	●	●		
TCGT-32.51-RAL	.650	3/8	.156	.173	1/64	●	●		

TURNING GRADES FOR MACHINING ALUMINUM

RTK20 (N05-N15)

Classic micro-grain uncoated hard metal grade for machining aluminum materials and other Non Ferrous metals as well as grey cast iron at medium to high cutting speeds, even under unfavourable machining conditions.

TK10MP (N05-N20, S05-S10)

Classic micro-grain uncoated hard metal grade for machining aluminum materials and other Non Ferrous metals as well as grey cast iron at medium to high cutting speeds, even under unfavourable machining conditions.

P	Work Material		Condition	Hardness HB	Grade	RP15TC	RP25TC	RP40K						
					FEED (in ipr)	.004" .008"	.008" .016"	.008" .016"						
					Material Grp.	Cutting Speeds vc ft/min (vc for T = 15 minutes)								
P	Unalloyed steel, cast steel and free cutting steel	< 0.25% C	annealed	125	1	1599	1300	1177	956	670	550			
		≥ 0.25% C	annealed	190	2	1563	1219	1050	816	570	467			
		< 0.55% C	heat-treated	250	3	1362	1047	952	731	570	420			
		≥ 0.55% C	annealed	220	4	1203	894	809	601	420	350			
			heat-treated	300	5	920	663	605	436	305	250			
	Low alloy steel and cast steel		annealed	200	6	1258	952	868	657	460	375			
			heat-treated	275	7	1203	894	809	601	420	350			
			heat-treated	300	8	1056	774	702	514	360	295			
			heat-treated	350	9	920	663	605	436	305	250			
	High alloy steel, cast steel & tool steel		annealed	200	10	1258	952	868	657	460	375			
		heat-treated	325	11	920	663	605	436	305	250				
M	Work Material		Condition	Hardness HB	Grade	RM20TC		RM35D		AS15				
					FEED (in ipr)			.006	.012	.008	.016	.004	.008	
					Material Grp.	Cutting Speeds vc ft/min (vc for T = 15 minutes)								
	400 Series Stainless steel and cast steel				ferritic / martensitic	180	12					360	295	
		martensitic	230	13					360	295				
300 Series Stainless steel		austenitic	200	14			585	390	450	370	820 590			
K	Work Material		Condition	Hardness HB	Grade	RK10			RK20					
					FEED (in ipr)				.004	.008	.016	.004	.008	.016
					Material Grp.	Cutting Speeds vc ft/min (vc for T = 15 minutes)								
	Grey cast iron				ferritic/pearlitic	180	15	1105	884	709	1000	804	631	
					pearlitic	260	16	744	575	445	675	510	405	
	Nodular cast iron				ferritic	160	17	1183	975	803	1020	875	720	
					pearlitic	250	18	637	504	397	580	450	360	
Malleable cast iron		ferritic	130	19	1580	1329	1118	1375	1175	1080				
		pearlitic	230	20	1105	884	709	1000	804	631				
N	Work Material		Condition	Hardness HB	Grade	TK10MP			RTK20					
					FEED (in ipr)				.006	.012	.006	.012		
					Material Grp.	Cutting Speeds vc ft/min (vc for T = 15 minutes)								
	Aluminum alloys wrought					60-100	21-22				1600	1300	1300	1100
	Cast aluminum alloys					75-130	23-25				2000	1500	1800	1400
Copper & copper alloys			90-110	26-28				1800	1600	1625	1450			
Non metallic materials				29-30				1200	900	975	870			
S	Work Material		Condition	Hardness HB	Grade	RM35D		AS15		TK10MP				
					FEED (in ipr)			.004	.008	.002	.006	.002	.004	
					Material Grp.	Cutting Speeds vc ft/min (vc for T = 15 minutes)								
	High-temperature alloys, super alloys	Fe - based			annealed	180	31	150	90	250	130			
					age hardened	280	32	100	70	220	95			
		Ni - or Co - based			annealed	250	33	120	90	250	150			
					age hardened	350	34	70	40	95	65			
					cast	320	35	100	70	160	195			
	Titanium, Ti alloys	pure titanium			annealed		36			300	150	120	100	
		alpha+beta			alloys age hardened		37			250	130	115	100	

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