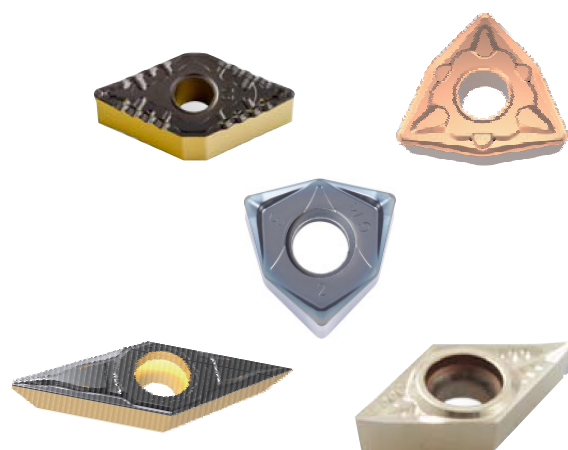




QUALITY
CONFIDENCE
CREATES



GENERAL
PRODUCT
CATALOGUE

CUTTING TOOLS



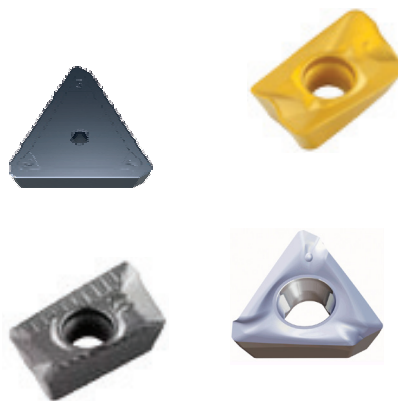
**QUALITY
CONFIDENCE
CREATES**

TURNING INSERTS



5
35

MILLING INSERTS



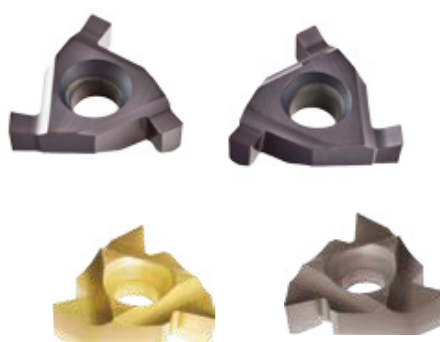
36
47

GROOVING INSERTS



48
57

THREADING INSERTS



58
75

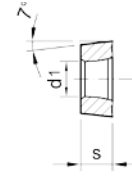
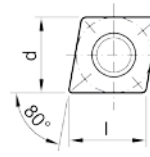
INDEXABLE INSERTS



76
77



80°

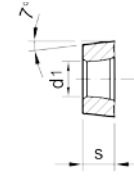
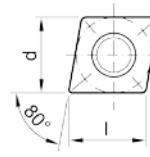


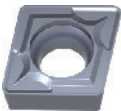
Steel	A (P)																Machining Types	● Continuous Cutting							
Stainless Steel	R (M)	⚙	●		●	●	⚙	⚙		●	⚙	⚙	⚙	⚙	●			⚙ Interrupted Cutting							
Cast Iron	F (K)			⚙												⚙									
Non-fer Metall	N	⚙		⚙									⚙			⚙									
Heatress Alloy, Titan All	S	●	●	●									⚙		●										
Hardened Steel	H		●															⚙ General Cutting							
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TP 3015	TU 5525	TZ 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 CCET-L	03 01 02 L						o										•	3.30	3.50	1.39	1.90	0.01 ~ 0.05	0.10 ~ 0.30		SCLC R/L
	04 01 02 L						o										•	4.10	4.30	1.79	2.30	0.01 ~ 0.10	0.10 ~ 0.50		

	Steel	A (P)						✚	✚	✚	✚	✚	✚	✚	✚		Machining Types	● Continuous Cutting					
	Stainless Steel	R (M)	✚	●		●	●	✚	✚			●	✚	✚	✚	●		✚ Interrupted Cutting					
	Cast Iron	F (K)			✚											✚			✚ General Cutting				
	Non-fer Metall	N		✚		✚								✚		✚							
	Heatress Alloy, Titan All	S	●	●		●								✚		●							
	Hardened Steel	H		●																			
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder	
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm
 CCGT-ALX	06 02 02-ALX	o			o								o		●	6.20	6.35	2.38	2.80	0.01 ~ 0.30	0.05 ~ 3.00	SCLC R/L	SCLC R/L
	06 02 04-ALX	o			o								o		●	6.00	6.35	2.38	2.80	0.02 ~ 0.40	0.10 ~ 3.00		
	09 T3 02-ALX	o			o								o		●	9.40	9.52	3.97	4.40	0.01 ~ 0.30	0.05 ~ 3.00		
	09 T3 04-ALX	o			o								o		●	9.20	9.52	3.97	4.40	0.02 ~ 0.40	0.10 ~ 4.00		
	09 T3 08-ALX	o			o										●	8.80	9.52	3.97	4.40	0.03 ~ 0.50	0.10 ~ 5.00		
	12 04 02-ALX	o			o										●	12.60	12.70	4.76	5.50	0.01 ~ 0.30	0.50 ~ 5.00		
	12 04 04-ALX	o			o								o		●	12.40	12.70	4.76	5.50	0.02 ~ 0.40	0.10 ~ 5.00		
	12 04 08-ALX	o			o										●	12.00	12.70	4.76	5.50	0.03 ~ 0.50	0.10 ~ 5.00		



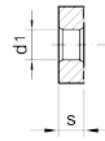
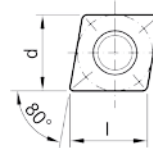
80°



Steel	A (P)																	Machining Types	● Continuous Cutting					
Stainless Steel	R (M)	⚙	●	●	●	⚙	⚙		●	⚙	⚙	⚙	●						⚙ Interrupted Cutting					
Cast Iron	F (K)			⚙													⚙							
Non-fer Metall	N	⚙		⚙									⚙				⚙							
Heatress Alloy, Titan All	S	●	●	●									⚙				●							
Hardened Steel	H		●															⚙ General Cutting						
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder		
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 CCMT-F19	06 02 02-F19											●		●	●		6.20	6.35	2.38	2.80	0.03 ~ 0.11	0.06 ~ 1.70	SCLC R/L	SCLC R/L
	06 02 04-F19											●		●	●		6.00	6.35	2.38	2.80	0.05 ~ 0.17	0.10 ~ 1.70		
	09 T3 02-F19											●		●	●		9.40	9.52	3.97	4.40	0.04 ~ 0.15	0.08 ~ 2.00		
	09 T3 04-F19											●		●	●		9.20	9.52	3.97	4.40	0.06 ~ 0.23	0.11 ~ 2.00		
	09 T3 08-F19											●		●	●		8.80	9.52	3.97	4.40	0.08 ~ 0.30	0.15 ~ 2.00		
	12 04 04-F19											●		●	●		12.40	12.70	4.76	5.50	0.07 ~ 0.27	0.14 ~ 2.00		
 CCMT-M18	06 02 04-M18			○											●		6.00	6.35	2.38	2.80	0.06 ~ 0.25	0.10 ~ 2.00	SCLC R/L	SCLC R/L
	09 T3 04-M18													●		9.40	9.52	3.97	4.40	0.06 ~ 0.25	0.20 ~ 3.00			
	09 T3 08-M18			○										●		8.80	9.52	3.97	4.40	0.07 ~ 0.35	0.20 ~ 3.00			
	12 04 04-M18			○										●		12.40	12.70	4.76	5.50	0.06 ~ 0.25	0.20 ~ 3.00			
	12 04 08-M18			○										●		12.00	12.70	4.76	5.50	0.07 ~ 0.35	0.20 ~ 3.00			
	12 04 12-M18													●		11.60	12.70	4.76	5.50	0.08 ~ 0.45	0.20 ~ 3.00			
 CCMT-M30	06 02 04-M30					●				○							6.00	6.35	2.38	2.80	0.05 ~ 0.20	0.40 ~ 1.00	SCLC R/L	SCLC R/L
	06 02 08-M30									○							5.70	6.35	2.38	2.80	0.05 ~ 0.25	0.40 ~ 1.00		
	09 T3 04-M30					●				○							9.40	9.52	3.97	4.40	0.05 ~ 0.20	0.40 ~ 1.50		
	09 T3 08-M30					●				○							8.80	9.52	3.97	4.40	0.05 ~ 0.25	0.40 ~ 1.50		
	12 04 04-M30					●				○							12.40	12.70	4.76	5.56	0.05 ~ 0.20	0.50 ~ 2.00		
	12 04 08-M30					●				○							12.00	12.70	4.76	5.56	0.05 ~ 0.25	0.50 ~ 2.00		
 CCMT-MD	06 02 04-MD									●		●					6.00	9.52	3.97	4.40	0.06 ~ 0.17	0.20 ~ 2.30	SCLC R/L	SCLC R/L
	06 02 08-MD								○	●		●					5.60	9.52	3.97	4.40	0.08 ~ 0.23	0.40 ~ 2.30		
	09 T3 04-MD									●		●					9.20	9.52	3.97	4.40	0.06 ~ 0.17	0.20 ~ 2.50		
	09 T3 08-MD									●		●					8.80	9.52	3.97	4.40	0.08 ~ 0.23	0.30 ~ 2.50		
	12 04 04-MD								○	●		●					12.40	12.70	4.76	5.50	0.06 ~ 0.17	0.30 ~ 3.50		
	12 04 08-MD								○	●		●					12.00	12.70	4.76	5.50	0.08 ~ 0.23	0.50 ~ 3.50		



80°



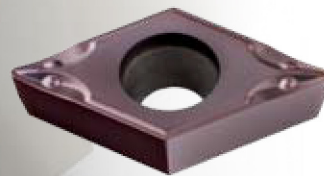
	Steel	A (P)																Machining Types	● Continuous Cutting						
	Stainless Steel	R (M)	⚙	●		●	●	⚙	⚙		●	⚙	⚙	⚙	●				⚙ Interrupted Cutting						
	Cast Iron	F (K)		⚙											⚙										
	Non-fer Metall	N	⚙		⚙								⚙			⚙									
	Heatress Alloy, Titan All	S	●	●	●							⚙			●				⚙ General Cutting						
	Hardened Steel	H		●																					
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TP 5525	TU 3015	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 CNGG-A20	12 04 04-A20	○		○		●											●	12.40	12.70	4.76	5.16	0.05 ~ 0.28	0.23 ~ 4.80	DCLN R/L PCBN R/L PCLN R/L	DCLN R/L PCLN R/L
	12 04 08-A20	○		○		●											●	12.00	12.70	4.76	5.16	0.10 ~ 0.40	0.8 ~ 3.50		

[illegible]

Our new geometries



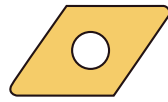
- C22



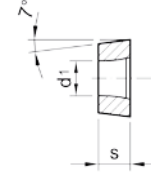
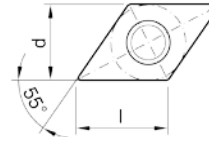
- M30

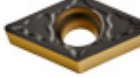


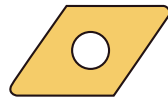
- S30



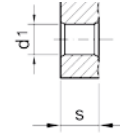
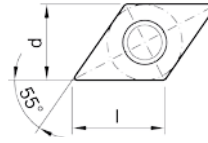
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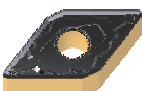


Steel		A (P)													Machining Types				● Continuous Cutting					
Stainless Steel		R (M)	⌑	●	●	●	⌑	⌑	●	⌑	●	●	●	⌑ Interrupted Cutting										
Cast Iron		F (K)		⌑									⌑						⌑ General Cutting					
Non-fer Metall		N	⌑	⌑								⌑		⌑										
Heatress Alloy, Titan All		S	●	●	●							⌑		●										
Hardened Steel		H	●																					
Insert	Part Number	Coated												Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 DCGT-ALX	07 02 02-ALX	○	○										○		●	7.50	6.35	2.38	2.80	0.01 ~ 0.30	0.05 ~ 3.00	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L	
	07 02 04-ALX	○	○										○		●	7.30	6.35	2.38	2.80	0.02 ~ 0.40	0.10 ~ 4.00			
	07 02 08-ALX			○											○	6.80	6.35	2.38	2.80	0.02 ~ 0.40	0.10 ~ 4.00			
	11 T3 02-ALX	○	○										○		●	11.40	9.52	3.97	4.40	0.02 ~ 0.30	0.05 ~ 4.00			
	11 T3 04-ALX	○	○										○		●	11.20	9.52	3.97	4.40	0.03 ~ 0.50	0.10 ~ 5.00			
	11 T3 08-ALX	○	○										○		●	10.80	9.52	3.97	4.40	0.03 ~ 0.50	0.10 ~ 5.00			
 DCMT-F19	07 02 02-F19				○								○	○	○	7.50	6.35	2.38	2.80	0.03 ~ 0.11	0.06 ~ 1.50	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L	
	07 02 04-F19				●								●	●	●	7.30	6.35	2.38	2.80	0.05 ~ 0.17	0.08 ~ 1.50			
	11 T3 02-F19				●								●	●	●	11.40	9.52	3.97	4.40	0.04 ~ 0.15	0.08 ~ 2.00			
	11 T3 04-F19				●								●	●	●	11.20	9.52	3.97	4.40	0.06 ~ 0.23	0.11 ~ 2.00			
	11 T3 08-F19				●								●	●	●	10.80	9.52	3.97	4.40	0.08 ~ 0.30	0.15 ~ 2.00			
 DCMT-M18	07 02 04-M18				●										●	7.30	6.35	2.38	2.80	0.06 ~ 0.25	0.10 ~ 2.00	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L	
	11 T3 04-M18				●										●	11.20	9.52	3.97	4.40	0.06 ~ 0.25	0.20 ~ 3.00			
	11 T3 08-M18				●										●	10.80	9.52	3.97	4.40	0.07 ~ 0.35	0.20 ~ 3.00			
 DCMT-M30	07 02 04-M30				●											7.30	6.35	2.38	2.80	0.05 ~ 0.20	0.20 ~ 1.50	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L	
	07 02 08-M30				●											7.10	6.35	2.38	2.80	0.05 ~ 0.25	0.20 ~ 1.50			
	11 T3 04-M30				●											11.20	9.52	3.97	4.40	0.08 ~ 0.23	0.25 ~ 2.00			
	11 T3 08-M30				●											10.80	9.52	3.97	4.40	0.08 ~ 0.25	0.25 ~ 2.00			
 DCMT-MD	07 02 04-MD												●		●	●	7.30	6.35	2.38	2.80	0.06 ~ 0.17	0.20 ~ 2.40	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L
	11 T3 04-MD												●		●	●	11.20	9.52	3.97	4.40	0.06 ~ 0.17	0.30 ~ 3.00		
	11 T3 08-MD												●		●	●	10.80	9.52	3.97	4.40	0.08 ~ 0.23	0.50 ~ 3.00		



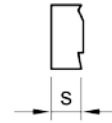
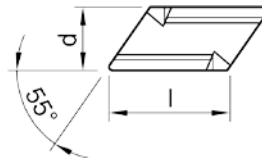
55°



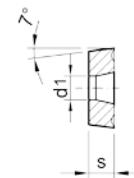
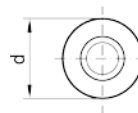
Steel	A (P)																	Machining Types	● Continuous Cutting						
Stainless Steel	R (M)	⬮	●		●	●	⬮	⬮		●	⬮	⬮	⬮	●					⬮ Interrupted Cutting						
Cast Iron	F (K)		⬮											⬮					⬮ General Cutting						
Non-fer Metall	N	⬮	⬮	⬮								⬮		⬮											
Heatress Alloy, Titan All	S	●	●	●							⬮		●												
Hardened Steel	H	●																							
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 DNGG-A20	15 06 04-A20	○		○		●											●	15.50	12.70	6.35	5.16	0.05 ~ 0.25	0.80 ~ 3.50	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	15 06 08-A20	○		○		●											●	15.50	12.70	6.35	5.16	0.05 ~ 0.40	0.80 ~ 3.50		
 DNMG-C22	15 06 04-C22											●		●				12.70	12.70	6.35	5.16	0.05 ~ 0.30	0.50 ~ 3.50	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	15 06 08-C22											●		●				12.70	12.70	6.35	5.16	0.10 ~ 0.40	0.70 ~ 4.00		
 DNMG-M15	11 04 04-M15		○									●		○				11.20	9.52	4.76	3.81	0.07 ~ 0.35	0.20 ~ 3.00	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	11 04 08-M15		○									●		○				10.80	9.52	4.76	3.81	0.15 ~ 0.45	0.30 ~ 5.00		
	15 06 04-M15		○									●		●				15.10	12.70	6.35	5.16	0.07 ~ 0.35	0.20 ~ 3.00		
	15 06 08-M15		○									●		●				14.70	12.70	6.35	5.16	0.15 ~ 0.45	0.50 ~ 5.00		
	15 06 12-M15		○									●		●				14.40	12.70	6.35	5.16	0.23 ~ 0.60	0.50 ~ 7.00		
 DNMG-MD	15 06 04-MD											●		●				15.10	12.70	6.35	5.16	0.05 ~ 0.35	0.80 ~ 5.00	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	15 06 08-MD											●		●				14.70	12.70	6.35	5.16	0.08 ~ 0.45	1.00 ~ 5.00		
	15 06 12-MD												●		●				14.40	12.70	6.35	5.16	0.10 ~ 0.50		
 DNMG-S11	15 06 04-S11				●													15.10	12.70	6.35	5.16	0.05 ~ 0.25	0.50 ~ 4.00	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	15 06 08-S11				●													14.70	12.70	6.35	5.16	0.10 ~ 0.40	1.00 ~ 4.50		



55°



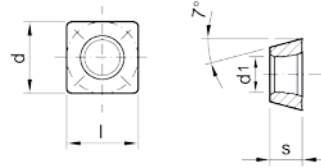
	Steel	A (P)																Machining Types	● Continuous Cutting						
	Stainless Steel	R (M)	●	●		●	●	●			●	●		●	●				● Interrupted Cutting						
	Cast Iron	F (K)			●												●		● Interrupted Cutting						
	Non-fer Metal	N		●		●							●				●		● General Cutting						
	Heatress Alloy, Titan All	S	●	●		●							●				●		● General Cutting						
	Hardened Steel	H		●															● General Cutting						
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 KNUX-11	16 04 05-L11						●					●						19.20	9.52	4.76	-	0.20 ~ 0.35	1.50 ~ 6.00	CKJN R/L	
	16 04 05-R11-M15						●					●						19.20	9.52	4.76	-	0.20 ~ 0.35	1.50 ~ 6.00		
	16 04 05-R11						●	○				●						19.20	9.52	4.76	-	0.20 ~ 0.35	1.50 ~ 6.00		
	16 04 10-L11						○	○										18.80	9.52	4.76	-	0.30 ~ 0.60	1.50 ~ 6.00		
	16 04 10-R11						○	○										18.80	9.52	4.76	-	0.30 ~ 0.60	1.50 ~ 6.00		
 KNUX-12	16 04 05-R12						○											19.20	9.52	4.76	-	0.25 ~ 0.35	1.50 ~ 6.00	CKJN R/L	
	16 04 10-L12						○											18.80	9.52	4.76	-	0.40 ~ 0.70	1.50 ~ 6.00		
	16 04 10-R12						○											18.80	9.52	4.76	-	0.40 ~ 0.70	1.50 ~ 6.00		



		Steel	A (P)														Machining Types				● Continuous Cutting				
		Stainless Steel	R (M)		⚙		●		●		⚙		●		⚙						●				
		Cast Iron	F (K)		⚙																⚙				
		Non-fer Metall	N		⚙		⚙								⚙								⚙		
		Heatress Alloy, Titan All	S		●		●		●												⚙		●		
		Hardened Steel	H		●																				
Insert	Part Number	Coated												Dimension				Cutting Data		Suitable Tools Holder					
		TK 5210	TK 5310	TK 5510	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 RCGT-AL/ALX	10 03 M0-ALX		o		o												•		10.00	3.18	-	0.10 ~ 0.30	1.00 ~ 3.00	SRDCN	
	12 04 M0-ALX		o		o												•		12.00	4.76	-	0.10 ~ 0.35	1.00 ~ 3.50		
 RCMT-MO	06 02 M0			o							•								6.00	2.38	-	0.05 ~ 0.20	0.50 ~ 2.00	SRDCN	
	08 03 M0			o							•								8.00	3.18	-	0.05 ~ 0.25	0.50 ~ 2.50		
	10 T3 M0			o								•							10.00	3.97		0.15 ~ 0.40	1.00 ~ 3.50		
	12 04 M0			o								•							12.00	4.76	-	0.20 ~ 0.50	2.00 ~ 4.50		

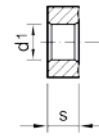
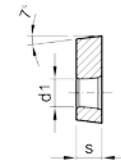


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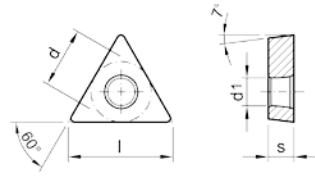
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	Stainless Steel	R (M)	⬆	●		●	●	⬆	⬆			●	⚙	⬆	●				⬆ Interrupted Cutting					
	Cast Iron	F (K)			⬆									⬆										
	Non-fer Metall	N	⬆		⬆									⚙		⬆			⚙ General Cutting					
	Heatress Alloy, Titan All	S	●	●	●								⬆		●									
	Hardened Steel	H		●																				
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 SCGT-ALX	09 T3 02-ALX															o	9.30	9.52	3.97	4.40	0.02 ~ 0.40	0.10 ~ 4.00	SSSC R/L	SSSC R/L
	09 T3 04-ALX		o		o											•	9.10	9.52	3.97	4.40	0.02 ~ 0.40	0.10 ~ 4.00		
	09 T3 08-ALX		o		o											•	8.70	9.52	3.97	4.40	0.03 ~ 0.50	0.10 ~ 5.00		
	12 04 04-ALX		o		o											•	12.30	12.70	4.76	5.50	0.02 ~ 0.40	0.10 ~ 5.00		
	12 04 08-ALX		o		o											•	11.90	12.70	4.76	5.50	0.03 ~ 0.50	0.10 ~ 5.00		

	Steel	A (P)																			Machining Types	● Continuous Cutting				
	Stainless Steel	R (M)	●	●		●	●	●	●				●	●		●	●						● Interrupted Cutting			
	Cast Iron	F (K)			●													●					● General Cutting			
	Non-fer Metall	N	●	●		●												●		●						
	Heatress Alloy, Titan All	S	●	●		●												●		●						
	Hardened Steel	H		●																						
Insert	Part Number	Coated																Dimension				Cutting Data		Suitable Tools Holder		
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar	
 SCMT-F19	09 T3 04-F19												o		●			9.10	9.52	3.97	4.40	0.06 ~ 0.23	0.11 ~ 2.00	SSSC R/L	SSSC R/L	
	09 T3 08-F19												o		●			8.70	9.52	3.97	4.40	0.08 ~ 0.30	0.15 ~ 2.00			
	12 04 08-F19													o					11.90	12.70	4.76	5.50	0.07 ~ 0.27			0.14 ~ 2.00
 SCMT-M18	09 T3 04-M18			o											●			9.10	9.52	3.97	4.40	0.062 ~ 0.25	0.20 ~ 3.00	SSSC R/L	SSSC R/L	
	09 T3 08-M18			o											●			8.70	9.52	3.97	4.40	0.07 ~ 0.35	0.20 ~ 3.00			
 SCMT-M30	12 04 08-M30					●												11.90	12.70	4.76	5.50	0.08 ~ 0.25	0.25 ~ 2.00	SSSC R/L	SSSC R/L	
 SCMT-MD	09 T3 04-MD											●		●				9.10	9.52	3.97	4.40	0.06 ~ 0.17	0.20 ~ 2.50	SSSC R/L	SSSC R/L	
	09 T3 08-MD											●		●				8.70	9.52	3.97	4.40	0.08 ~ 0.23	0.30 ~ 2.50			
	12 04 04-MD											●		●				12.30	12.70	4.76	5.50	0.06 ~ 0.17	0.30 ~ 3.50			
	12 04 08-MD											●		●				11.90	12.70	4.76	5.50	0.08 ~ 0.23	0.50 ~ 3.50			

**SNMG-R12**TCGT-ALX



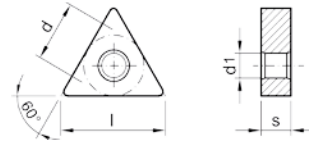
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Steel	A (P)																	Machining Types	● Continuous Cutting						
Stainless Steel	R (M)	✚	●		●	●	✚				●	✚		✚		●			✚ Interrupted Cutting						
Cast Iron	F (K)			✚												✚			✚ General Cutting						
Non-fer Metal	N		✚		✚									✚		✚									
Heatress Alloy, Titan All	S	●	●		●									✚		●									
Hardened Steel	H		●																						
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 TCMT-F19	09 02 02-F19						o				o			o				9.10	5.56	2.38	2.50	0.03 ~ 0.13	0.06 ~ 1.70	STGC R/L	STFC R/L
	09 02 02-F19						o				o			o				8.60	5.56	2.38	2.50	0.05 ~ 0.19	0.10 ~ 1.70		
	11 02 02-F19						o				o			o				10.50	6.35	2.38	2.80	0.03 ~ 0.13	0.06 ~ 1.70		
	11 02 04-F19						o				●			●				10.00	6.35	2.38	2.80	0.05 ~ 0.19	0.10 ~ 1.70		
	11 02 08-F19						o				●			●				9.00	6.35	2.38	2.80	0.07 ~ 0.26	0.13 ~ 1.70		
	11 03 02-F19						o				o			o				10.50	6.35	3.18	3.40	0.03 ~ 0.13	0.06 ~ 1.70		
	11 03 04-F19						o				●			●				10.00	6.35	3.18	3.40	0.05 ~ 0.19	0.10 ~ 1.70		
	11 03 08-F19						o				●			●				9.00	6.35	3.18	3.40	0.07 ~ 0.26	0.13 ~ 1.70		
	16 T3 04-F19						o				●			●				15.50	9.52	3.97	4.40	0.06 ~ 0.23	0.11 ~ 2.00		
 TCMT-MD	11 02 04-MD													●				10.00	6.35	2.38	2.80	0.07 ~ 0.25	0.20 ~ 2.50	STGC R/L	STFC R/L
	11 02 08-MD													●				9.00	6.35	2.38	2.80	0.10 ~ 0.30	0.30 ~ 2.50		
	16 T3 04-MD										●			●				15.50	9.52	3.97	4.40	0.07 ~ 0.25	0.30 ~ 2.50		
	16 T3 08-MD										●			●				14.50	9.52	3.97	4.40	0.10 ~ 0.30	0.50 ~ 2.50		
	16 T3 12-MD														o			13.50	9.52	3.97	4.40	0.12 ~ 0.35	0.70 ~ 2.50		



60°

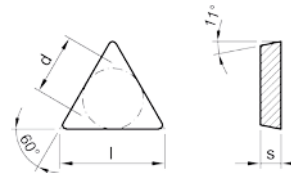


Steel	A (P)																	Machining Types	● Continuous Cutting					
Stainless Steel	R (M)	⬇	●		●	●	⬇				●	⬇		⬇	●				⬇ Interrupted Cutting					
Cast Iron	F (K)			⬇												⬇			⬇ General Cutting					
Non-fer Metal	N		⬇		⬇									⬇		⬇								
Heatress Alloy, Titan All	S	●	●		●									⬇		●								
Hardened Steel	H		●																					
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 TNGG-A20	16 04 04-A20																● 15.50	9.52	4.76	3.80	0.12 ~ 0.30	1.00 ~ 3.50	MTJN R/L PTFN R/L PTGN R/L	PTFN R/L
	16 04 08-A20																● 14.50	9.52	4.76	3.80	0.15 ~ 0.35	1.30 ~ 3.50		

	Steel	A (P)																Machining Types	● Continuous Cutting					
	Stainless Steel	R (M)	⬆	●		●	●	●	⬆				●	⬆		⬆	●		⬆ Interrupted Cutting					
	Cast Iron	F (K)			⬆											⬆								
	Non-fer Metall	N		⬆		⬆								⬆		⬆								
	Heatress Alloy, Titan All	S	●	●		●								⬆		●			⬆ General Cutting					
	Hardened Steel	H		●																				
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder		
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 TNMG-S11	16 04 04-S11					●									●		15.50	9.52	4.76	3.80	0.08 ~ 0.23	0.20 ~ 3.50	MTJN R/L PTFN R/L PTGN R/L	PTFN R/L
	16 04 08-S11					●									●		14.50	9.52	4.76	3.80	0.15 ~ 0.45	0.50 ~ 5.00		
	16 04 12-S11						○									○		13.50	9.52	4.76	3.80	0.23 ~ 0.60		
 TNMG-MD	16 04 04-MD								○	●		●					15.50	9.52	4.76	3.80	0.05 ~ 0.35	0.80 ~ 4.50	MTJN R/L PTFN R/L PTGN R/L	PTFN R/L
	16 04 08-MD								○	●		●					14.50	9.52	4.76	3.80	0.08 ~ 0.45	1.00 ~ 4.50		
	22 04 04-MD											●		●			22.0	12.7	4.76	5.16	0.15 ~ 0.30	0.40 ~ 3.00		
	22 04 08-MD											●		●			22.0	12.7	4.76	5.16	0.15 ~ 0.50	0.50 ~ 4.00		
	22 04 12-MD											●		●			22.0	12.7	4.76	5.16	0.18 ~ 0.60	0.80 ~ 5.00		



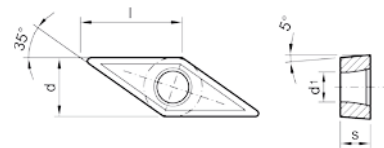
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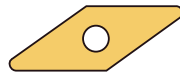
Steel	A (P)																Machining Types	● Continuous Cutting							
Stainless Steel	R (M)	⚙			●	●	⚙	⚙			●	⚙		⚙	●			⚙ Interrupted Cutting							
Cast Iron	F (K)			⚙											⚙										
Non-fer Metal	N		⚙		⚙									⚙		⚙									
Heatress Alloy, Titan All	S	●	●		●								⚙		●										
Hardened Steel	H		●															⚙ General Cutting							
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 TPUN-EN	16 03 04-EN																o	15.50	9.52	3.18	-	0.08 ~ 0.25	1.00 ~ 5.00		
	22 04 08-EN																•								



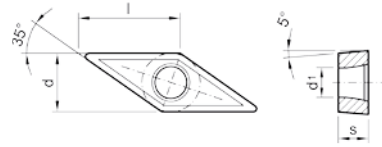
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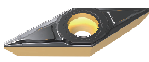
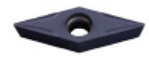


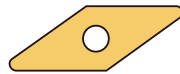
Steel	A (P)																	Machining Types	● Continuous Cutting						
Stainless Steel	R (M)	⬆	●		●	●	●	⬆			●	⬆	⬆	●					⬆ Interrupted Cutting						
Cast Iron	F (K)			⬆										⬆					⬆ General Cutting						
Non-fer Metall	N	⬆		⬆									⬆			⬆									
Heatress Alloy, Titan All	S	●	●	●								⬆		●											
Hardened Steel	H	●																							
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 VBGT-ALX	16 04 04-ALX	o		o													•	15.6	9.52	4.76	4.40	0.02 ~ 0.40	0.10 ~ 5.00	SVJB R/L	
	16 04 08-ALX	o		o													•	14.6	9.52	4.76	4.40	0.02 ~ 0.40	0.10 ~ 5.00		



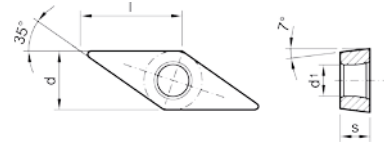
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Steel	A (P)																	Machining Types	● Continuous Cutting					
Stainless Steel	R (M)	⬮	●	●	●	⬮					●	⬮	⬮	●					⬮ Interrupted Cutting					
Cast Iron	F (K)			⬮												⬮			⬮ General Cutting					
Non-fer Metal	N		⬮		⬮								⬮			⬮								
Heatress Alloy, Titan All	S	●	●	●								⬮				●								
Hardened Steel	H		●																					
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder		
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder
 VBMT-F19	11 03 02-F19											○		○			10.50	6.35	3.18	2.80	0.03 ~ 0.13	0.06 ~ 1.70	SVJB R/L	
	11 03 04-F19											○		○			10.00	6.35	3.18	2.80	0.05 ~ 0.19	0.10 ~ 1.70		
	11 03 08-F19											○		○			9.00	6.35	3.18	2.80	0.07 ~ 0.26	0.13 ~ 1.70		
	16 04 02-F19											○		○			16.10	9.52	4.76	4.40	0.04 ~ 0.14	0.07 ~ 1.70		
	16 04 04-F19											●		●			15.60	9.52	4.76	4.40	0.05 ~ 0.20	0.10 ~ 1.80		
	16 04 08-F19											●		●			14.60	9.52	4.76	4.40	0.07 ~ 0.27	0.14 ~ 1.80		
 VBMT-M18	11 03 04-M18														○		10.00	6.35	3.18	2.80	0.07 ~ 0.25	0.20 ~ 2.50	SVJB R/L	
	16 04 04-M18													●			15.60	9.52	4.76	4.40	0.07 ~ 0.25	0.30 ~ 2.50		
	16 04 08-M18														●			14.60	9.52	4.76	4.40	0.10 ~ 0.30		
 VBMT-M30	11 03 04-M30					○											11.00	6.35	3.18	2.80	0.05 ~ 0.20	0.30 ~ 2.00	SVJB R/L	
	16 04 04-M30					●											16.64	9.52	4.76	4.40	0.05 ~ 0.20	0.30 ~ 2.50		
	16 04 08-M30					●												16.64	9.52	4.76	4.40	0.05 ~ 0.25		
 VBMT-MD	16 04 04-MD					●			○		●		●				15.60	9.52	4.76	4.40	0.09 ~ 0.19	0.30 ~ 2.70	SVJB R/L	
	16 04 08-MD					●			○		●		●				14.60	9.52	4.76	4.40	0.09 ~ 0.23	0.50 ~ 2.70		

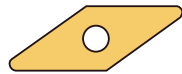


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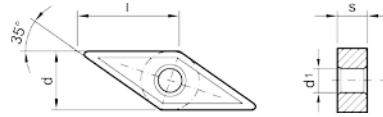


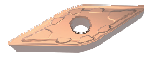
	Steel	A (P)																Machining Types	● Continuous Cutting						
	Stainless Steel	R (M)	✖	●		●	●	✖	✖			●	✖	✖		✖	●								
	Cast Iron	F (K)			✖												✖		✖ Interrupted Cutting						
	Non-fer Metall	N		✖		✖								✖			✖								
	Heatress Alloy, Titan All	S	●	●		●								✖			●								
	Hardened Steel	H		●														✖ General Cutting							
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5190	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 VCMT-ALX	11 03 02-ALX		o	o									o		o		10.50	6.35	3.18	2.80	0.01 ~ 0.30	0.05 ~ 3.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L	
	11 03 04-ALX		o	o									o		o		10.00	6.35	3.18	2.80	0.02 ~ 0.40	0.10 ~ 4.00			
	11 03 08-ALX		o	o											o		9.00	6.35	3.18	2.80	0.03 ~ 0.50	0.10 ~ 5.00			
	13 03 02-ALX		o	o											o		10.50	7.94	3.18	3.40	0.01 ~ 0.30	0.10 ~ 4.50			
	13 03 04-ALX		o												o		10.00	7.94	3.18	3.40	0.02 ~ 0.40	0.10 ~ 4.50			
	16 04 02-ALX		o	o										o	o		16.10	9.52	4.76	4.40	0.01 ~ 0.30	0.05 ~ 4.50			
	16 04 04-ALX		o	o										o		●	15.60	9.52	4.76	4.40	0.02~ 0.40	0.10 ~ 5.00			
	16 04 08-ALX		o	o										o		●	14.00	9.52	4.76	4.40	0.03 ~ 0.50	0.10 ~ 5.00			
	16 04 12-ALX		o	o											o			13.60	9.52	4.76	4.40	0.03 ~ 0.50			0.10 ~ 5.00
	22 05 30-ALX		o	o												o		14.30	12.70	5.56	5.60	0.08 ~ 1.00			0.15 ~ 7.00

Steel	A (P)																	Machining Types	● Continuous Cutting						
Stainless Steel	R (M)	●	●		●	●	●	●			●	✱		●		●			✱ Interrupted Cutting						
Cast Iron	F (K)			●												●			✱ General Cutting						
Non-fer Metall	N		●		●									✱			●								
Heatress Alloy, Titan All	S	●	●		●									●			●								
Hardened Steel	H		●																						
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 VCMT-F19	11 03 02-F19										○		○					10.50	6.35	3.18	2.80	0.02 ~ 0.13	0.07 ~ 1.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	11 03 04-F19										○		○					10.00	6.35	3.18	2.80	0.05 ~ 0.20	0.05 ~ 1.50		
	16 04 02-F19											○		○				16.10	9.52	4.76	4.40	0.04 ~ 0.14	0.04 ~ 1.80		
	16 04 04-F19											●		●				15.60	9.52	4.76	4.40	0.05 ~ 0.20	0.05 ~ 1.80		
	16 04 08-F19											●		●				14.00	9.52	4.76	4.40	0.07 ~ 0.27	0.07 ~ 1.80		
 VCMT-M18	16 04 04-M18			○											●			15.60	9.52	4.76	4.40	0.07 ~ 0.25	0.07 ~ 2.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	16 04 08-M18			○											●			14.00	9.52	4.76	4.40	0.10~ 0.30	0.10 ~ 2.50		
 VCMT-M30	16 04 04-M30					●												15.60	9.52	4.76	4.40	0.05 ~ 0.20	0.05 ~ 2.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	16 04 08-M30					●												14.00	9.52	4.76	4.40	0.05 ~ 0.25	0.05 ~ 2.50		
 VCMT-MD	11 03 02-MD										○		○					10.00	6.35	3.18	2.80	0.06 ~ 0.19	0.06 ~ 2.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	16 04 04-MD										●		●					15.60	9.52	4.76	4.40	0.06 ~ 0.19	0.06 ~ 2.70		
	16 04 08-MD											●		●					14.00	9.52	4.76	4.40	0.09 ~ 0.23		



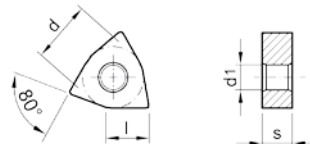
35°



Steel	A (P)																	Machining Types	● Continuous Cutting						
Stainless Steel	R (M)	●	●		●	●	●	●			●	●	●						● Interrupted Cutting						
Cast Iron	F (K)			●												●			● General Cutting						
Non-fer Metall	N	●	●		●											●	●								
Heatress Alloy, Titan All	S	●	●		●											●	●								
Hardened Steel	H		●																						
Insert	Part Number	Coated													Dimension				Cutting Data		Suitable Tools Holder				
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1210	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 VNMG-M15	16 04 04-M15			o							●		●					15.60	9.52	4.76	3.80	0.08 ~ 0.23	0.20 ~ 3.50	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	16 04 08-M15			o							●		●					14.60	9.52	4.76	3.80	0.15 ~ 0.45	0.50 ~ 5.00		
 VNMG-S11	16 04 04-S11					●									●			16.60	9.52	4.76	3.81	0.09 ~ 0.35	0.50 ~ 4.00	SVHC R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	16 04 08-S11					●									●			16.20	9.52	4.76	3.81	0.10 ~ 0.40	1.00 ~ 4.50		



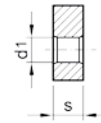
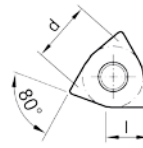
80°

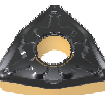


Steel		A (P)						✚	✚	✚	✚	✚	✚	✚	✚	✚	Machining Types	● Continuous Cutting							
Stainless Steel		R (M)	✚	●		●	●	✚	✚			●	✚		✚	●		✚ Interrupted Cutting							
Cast Iron		F (K)			✚										✚										
Non-fer Metall		N		✚		✚								✚		✚		✚ General Cutting							
Heatress Alloy, Titan All		S	●	●		●								✚		●									
Hardened Steel		H		●																					
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 WNGG-A20	06 04 04-A20		o		o												o	6.20	9.52	4.76	3.80	0.10 ~ 0.30	0.50 ~ 3.00	DWLN R/L PWLN R/L	
	06 04 08-A20		o		o												o	6.10	9.52	4.76	3.80	0.10 ~ 0.40	0.80 ~ 3.50		
	08 04 04-A20		o		o		●										o	8.40	12.70	4.76	5.16	0.10 ~ 0.45	0.50 ~ 4.50		
	08 04 08-A20		o		o		●										o	8.30	12.70	4.76	5.16	0.10 ~ 0.45	0.50 ~ 4.50		



80°



Steel	A (P)																			Machining Types	● Continuous Cutting				
Stainless Steel	R (M)	⬆	●		●	●	●	⬆				●	⬆	⬆		●					⬆ Interrupted Cutting				
Cast Iron	F (K)			⬆													⬆								
Non-fer Metall	N		⬆		⬆								⬆				⬆								
Heatress Alloy, Titan All	S	●	●		●								⬆					●			⬆ General Cutting				
Hardened Steel	H		●																						
Insert	Part Number	Coated														Dimension				Cutting Data		Suitable Tools Holder			
		TK 5210	TK 5310	TK 5515	TK 5710	TM 5125	TM 5130	TM 5220	TP 2135	TP 3020	TP 3120	TP 4025	TP 5220	TP 5345	TU 3015	TU 5525	TK 1110	l	Ø d	s	Ø d1	fn mm/rev	ap mm	Toolholder	Boring Bar
 WNMG-A20	06 04 04-A20																o	6.20	9.52	4.76	3.81	0.10 ~ 0.30	0.50 ~ 3.00	PWLN R/L	
	08 04 04-A20																●	8.40	12.70	4.76	5.16	0.05 ~ 0.25	0.80 ~ 3.50		
	08 04 08-A20																	●	8.30	12.70	4.76	5.16	0.10 ~ 0.40		
 WNMG-C22	08 04 04-C22											●		●				8.40	12.70	4.76	5.16	0.05 ~ 0.30	0.80 ~ 4.00	DWLN R/L PWLN R/L	
	08 04 08-C22											●		●				8.30	12.70	4.76	5.16	0.10 ~ 0.40	0.80 ~4.00		
 WNMG-M15	06 04 04-M15											o		o				6.20	9.52	4.76	3.81	0.08 ~ 0.23	0.20 ~ 3.00	DWLN R/L PWLN R/L	
	06 04 08-M15											o		o				6.10	9.52	4.76	3.81	0.15 ~ 0.45	0.50 ~ 3.50		
	08 04 04-M15											●		●				8.40	12.70	4.76	5.16	0.08 ~ 0.23	0.20 ~ 3.00		
	08 04 08-M15											●		●				8.30	12.70	4.76	5.16	0.08 ~ 0.45	1.00 ~ 5.00		
	08 04 12-M15											●		●				8.20	12.70	4.76	5.16	0.12 ~ 0.35	1.00 ~ 5.00		
 WNMG-MD	08 04 04-MD				●							●		●				8.40	12.70	4.76	5.16	0.05 ~ 0.35	0.80 ~ 4.00	DWLN R/L PWLN R/L	
	08 04 08-MD				●							●		●				8.30	12.70	4.76	5.16	0.08 ~ 0.45	1.00 ~ 4.00		
	08 04 12-MD											●		●				8.20	12.70	4.76	5.16	0.10 ~ 0.50	1.20 ~ 4.00		
 WNMG-S11	06 04 08-S11				o									o				6.40	9.52	3.97	3.81	0.10 ~ 0.25	1.00 ~ 3.50	DWLN R/L PWLN R/L	
	08 04 04-S11				●									●				8.40	12.70	4.76	5.16	0.05 ~ 0.25	0.50 ~ 3.50		
	08 04 08-S11				●										●				8.30	12.70	4.76	5.16	0.10 ~ 0.40		

For each application the best grade

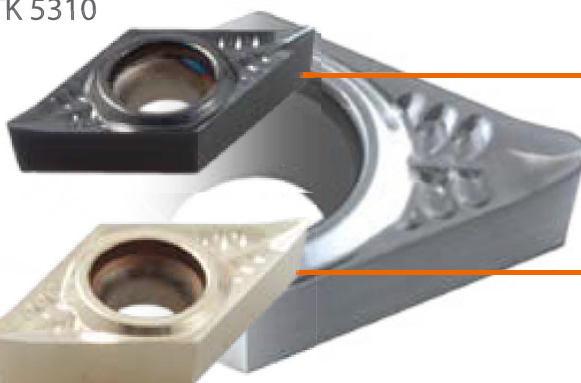
ALUMINIUM

DCGT-TK 1210



*uncoated
Micrograin
for Aluminium*

DCGT-TK 5310



Saphitec for
Aluminium, HRSA, GFK, CFK,

DCGT-TK 5710



Goldtec coated
Aluminium
Special Alloys

DCGT-TP 5345

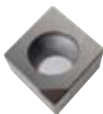
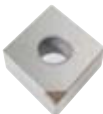


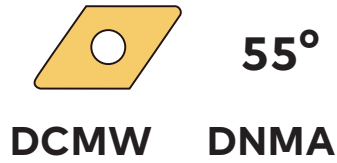
for
Niro Stainless Steel



80°

CCMW
CNMA
CPMW

Steel		A (P)			Machining Types	● Continuous Cutting
Stainless Steel		R (M)				⌚ Interrupted Cutting
Cast Iron		F (K)	●	⌚		✚ General Cutting
Non-fer Metall		N				
Heatress Alloy, Titan All		S		●		
Hardened Steel		H	●	⌚		
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder		
		F	T	Toolholder	Boring Bar	
 CCMW	06 02 02	○	○	SCLC R/L	SCLC R/L	
	06 02 04	○	○			
	06 02 08	○	○			
	09 T3 02	○	○			
	09 T3 04	○	○			
	09 T3 08	○	○			
	12 04 02	○	○			
	12 04 04	○	○			
	12 04 08	○	○			
 CNMA	09 03 02	○	○	DCLN R/L PCBN R/L PCLN R/L	DCLN R/L PCLN R/L	
	09 03 04	○	○			
	09 03 08	○	○			
	12 04 02	○	○			
	12 04 04	○	○			
	12 04 08	○	○			
	12 04 12	○	○			
 CPMW	05 02 02	○	○			
	05 02 04	○	○			
	06 02 02	○	○			
	06 02 04	○	○			
	09 T3 02	○	○			
	09 T3 04	○	○			
	09 T3 08	○	○			
	12 04 02	○	○			
	12 04 04	○	○			
	12 04 08	○	○			



Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)	●	⌘		⌘ Interrupted Cutting
Non-fer Metall	N				
Heatress Alloy, Titan All	S		●		✚ General Cutting
Hardened Steel	H	●	⌘		
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 DCMW	07 02 02	○	○	SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L
	07 02 04	○	○		
	07 02 08	○	○		
	11 T3 02	○	○		
	11 T3 04	○	○		
	11 T3 08	○	○		
 DNMA	15 04 02	○	○	DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	15 04 04	○	○		
	15 04 08	○	○		
	15 06 02	○	○		
	15 06 04	○	○		
	15 06 08	○	○		
	15 06 12	○	○		
 EPMW	05 02 02	○	○		
	05 02 04	○	○		
	06 02 02	○	○		
	06 02 04	○	○		
	08 03 02	○	○		
	08 03 04	○	○		
	08 03 08	○	○		



90°

SCMW
SNMA
SNMN

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)	●	⌄		⌄ Interrupted Cutting
Non-fer Metall	N				
Heatress Alloy, Titan All	S		●		✚ General Cutting
Hardened Steel	H	●	⌄		
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 SCMW	09 03 02	o	o	SSSC R/L	SSSC R/L
	09 03 04	o	o		
	09 03 08	o	o		
	09 T3 02	o	o		
	09 T3 04	o	o		
	09 T3 08	o	o		
	12 04 02	o	o		
	12 04 04	o	o		
	12 04 08	o	o		
 SNMA	12 03 02	o	o	PSBN R/L PSKN R/L PSSN R/L	PSKN R/L
	12 04 02	o	o		
	12 04 08	o	o		
 SNMN	12 03 04	o	o	PSBN R/L PSKN R/L PSSN R/L	PSKN R/L
	12 03 08	o	o		
	12 04 04	o	o		



90°

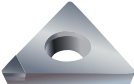
SPMN



60°

TCMW

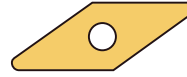
TNMA

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)	●	⌄		⌄ Interrupted Cutting
Non-fer Metall	N				
Heatress Alloy, Titan All	S		●		✚ General Cutting
Hardened Steel	H	●	⌄		
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 SPMN	09 03 02	○	○		
	09 03 04	○	○		
	09 03 08	○	○		
	12 03 02	○	○		
	12 03 04	○	○		
	12 03 08	○	○		
 TCMW	09 02 02	○	○	STGC R/L	STFC R/L
	09 02 04	○	○		
	09 02 08	○	○		
	11 02 02	○	○		
	11 02 04	○	○		
	11 02 08	○	○		
	16 T3 02	○	○		
	16 T3 04	○	○		
	16 T3 08	○	○		
 TNMA	16 04 02	○	○	MTJN R/L PTFN R/L PTGN R/L	PTFN R/L
	16 04 04	○	○		
	16 04 08	○	○		



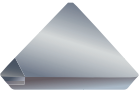
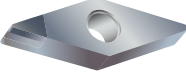
60°

TPMN



35°

VBMW VCMW VNMA

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)	●	⌘		⌘ Interrupted Cutting
Non-fer Metall	N				
Heatress Alloy, Titan All	S		●		✚ General Cutting
Hardened Steel	H	●	⌘		
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 TPMN	11 03 02	○	○		
	11 03 04	○	○		
	11 02 08	○	○		
 VBMW	16 04 02	○	○	SVJB R/L	
	16 04 04	○	○		
	16 04 08	○	○		
 VCMW	11 03 02	○	○	SVHC R/L SVJC R/L SVVCN R/L	SVQC R/L SVUC R/L
	11 03 04	○	○		
	11 03 08	○	○		
	16 04 02	○	○		
	16 04 04	○	○		
	16 04 08	○	○		
	16 04 12	○	○		
 VNMA	16 04 02	○	○		
	16 04 04	○	○		
	16 04 08	○	○		



80°

CCMW CNMA



55°

DCMW

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)				⬆ Interrupted Cutting
Non-fer Metall	N	●	⬆		
Heatress Alloy, Titan All	S				✚ General Cutting
Hardened Steel	H				
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 CCMW	06 02 01			SCLC R/L	SCLC R/L
	06 02 02				
	06 02 04				
	09 T3 02				
	09 T3 04				
	09 T3 08				
	12 04 04				
	12 04 08				
 CNMA	12 04 04			DCLN R/L PCBN R/L PCLN R/L	DCLN R/L PCLN R/L
	12 04 08				
 DCMW	07 02 01			SDAC R/L SDHC R/L SDJC R/L SDNCN	SDQC R/L SDUC R/L
	07 02 02				
	07 02 04				
	11 T3 02				
	11 T3 04				
	11 T3 08				



55°

DNMA



RCMW



60°

TCMW

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)				⚙ Interrupted Cutting
Non-fer Metall	N	●	⚙		
Heatress Alloy, Titan All	S				✚ General Cutting
Hardened Steel	H				
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 DNMA	11 04 04			DDJN R/L PDJN R/L	DDUN R/L PDUN R/L
	11 04 08				
	15 06 04				
	15 06 08				
 RCMW	06 02 00			SRDCN	
	08 03 00				
	10 03 00				
	12 T3 00				
 TCMW	09 02 01			STGC R/L	STFC R/L
	09 02 02				
	09 02 04				
	11 02 02				
	11 02 04				
	11 02 08				
	16 T3 04				
	16 T3 08				



60°

TNMA



35°

VCMW

Steel	A (P)			Machining Types	● Continuous Cutting
Stainless Steel	R (M)				
Cast Iron	F (K)				⬆ Interrupted Cutting
Non-fer Metall	N	●	⬆		
Heatress Alloy, Titan All	S				✚ General Cutting
Hardened Steel	H				
Insert	Part Number	Corner EW CDX 09		Suitable Tools Holder	
		F	T	Toolholder	Boring Bar
 TNMA	16 04 02			MTJN R/L PTFN R/L PTGN R/L	PTFN R/L
	16 04 04				
	16 04 08				
 VCMW	11 03 02			SVHC R/L SVJB R/L SVJC R/L SVVCN	SVQC R/L SVUC R/L
	11 03 04				
	11 03 08				
	16 04 02				
	16 04 04				
	16 04 08				

ISO	P						M				K					Hardened	
Material	high		medium		low	intermittent cutting	high	medium	low		high	medium		low		low	
	P01	P10	P20	P30	P40	P50	M10	M20	M30	M40	K01	K10	K20	K30	K40		
Coated Carbide			TU 5525					TU 5525			TK 5210						
		TP 3020						TM 5125				TU 5525					
			TP 2135					TP 2135				TK 5310					
			TP 5245					TM 5130				TK 5710					
			TP 5345									TK 5515					
		TP 4025						TM 5220				TU 3015					
		TU 3015															
			TP 3120														
		TP 5220															
CBN																CDX09	
Uncoated Carbide												TK 1210					

CNMG 120404 - A20

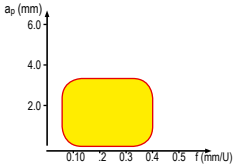
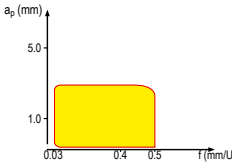
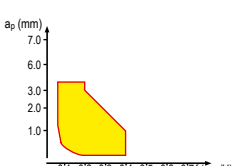
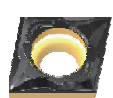
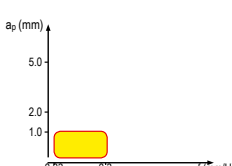
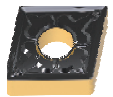
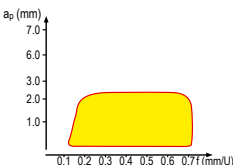
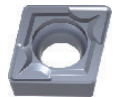
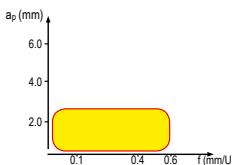
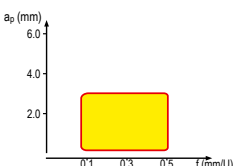
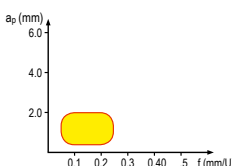
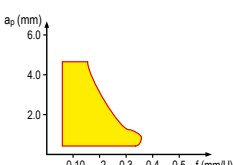
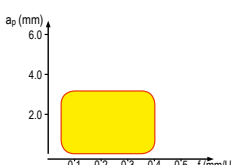
T	K	12	10
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Application 1	T	Turning
	M	Milling
	G	Grooving
	T	Threading
	D	Drilling

Application 2	P	Steel
	M	Stainless Steel
	K	Aluminium Non Metallic Materials
	S	Heat Resistant Alloys
	H	Hardened Steel
	U	All-Purpose
	W	DIA
	X	CBN
	Y	PKD
	Z	Cermet
	D	DLC
	C	Ceramics

Serial-No.	11 - 20	Uncoated
	21 - 50	CVD
	51 - 99	PVD

ISO	10	
	20	
	30	
	40	
	50	
		

Negative Inserts			Positive Inserts		
Chipbreaker	Application Range	Highlights	Chipbreaker	Application Range	Highlights
 A20		Alu-alloys, stainless steel • Sharp cutting edge (ground circumference) • Extremely high helix	 ALX		Aluminium cutting • Exclusive chipbreaker for aluminium and aluminium alloy, finishing of stainless steel • High rake angle, precision - ground cutting edge
 C22		• Excellent chipcontrol while copy turning and internal machining • Very good surface while face turning	 F19		Finishing • High helix, sharp cutting edge • Very good surface quality, also in case of internal machining
 M15		Universal geometry for medium range • Special substrate for highest wear resistance • Wide field of stainless steel machining	 M18		Universal geometry for medium range • Special substrate for highest wear resistance • Wide field of applications through PVD-Multilayer-coating
 MD		Medium cutting • Wide available chip control range from medium-finishing to medium-roughing • Suitable chip breaker for CNC machining • Suitable for stainless steel machining	 M30		Medium cutting • optimized chipcontrol at ductile materials • very good surface due to sharp cutting edge and marginal cutting force
 S11		• Sharp, stron cutting edge • Excellent chip control also at long-chipping soft stainless and mild steels	 MD		Medium cutting • Excellent chip control at wide range of cutting conditions • Suitable for stainless steel cutting

CNMG 120408

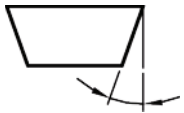
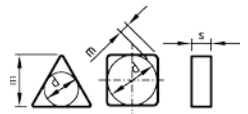
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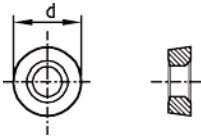
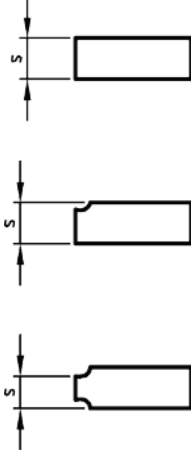
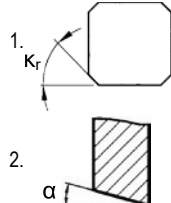
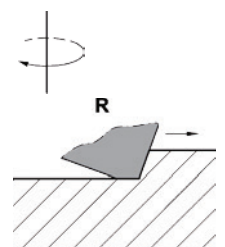
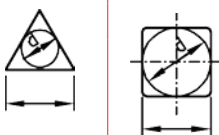
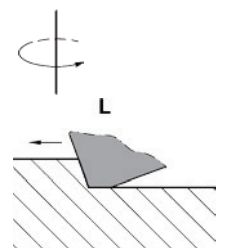
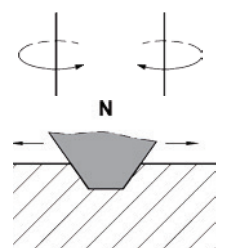
Application	A	Aluminium
	C	Copying
	F	Finishing
	H	Heavy Roughing
	M	Medium Cutting
	R	Roughing
	S	Medium Cutting of Stainless Steel

Material	Alloy	Hardness HB	VDI 3323	Cutting Speeds v_c [m/min]			
				TK 1210 K10	TK 5310 K10C	TK 5515 K15C	TK 5710 K10C
A (P)	Mild Steel	Annealed < 0,15% C	125	1			100-150
		Annealed 0,15% - 0,45% C	150 - 250	2			80-140
		Heat Treated > 0,45% C	300	3			70-110
	Lower Alloyed Steel	Annealed	180	6			80-130
		Heat Treated	275	7			70-120
		Heat Treated	300	8			60-90
		Heat Treated	350	9			
	Highly Alloyed Steel	Annealed	200	10			80-110
		Heat Treated	350	11			
	Corrosion-Resistant Steel	Annealed	200	12			130-180
		Heat Treated	350	13			
R (M)	Stainless Steel	Ferritic, Martensitic, Annealed	200	14		130-200	
		Austenitic	180	14		90-190	90-130
		Duplex	230 - 260	14			
		Austenitic, Ferritic	330	14			
F (K)	Grey Cast Iron	Pearlitic, Ferritic	180	15	140-200	100-200	180-280
		Pearlitic, Martensitic	260	16	100-160	100-220	170-230
	Nodular Cast Iron	Ferritic	160	17	160-200	120-200	150-230
		Pearlitic	250	18	110-150	120-250	120-180
	Malleable Cast Iron	Ferritic	130	19	160-220	120-200	180-300
		Pearlitic	230	20	140-180	100-200	180-250
N	Aluminium - Forging Alloy	Not Hardenable	60	21	300-3000	250-3000	250-2800
		Hardenable	100	22	200-2000	250-2500	180-2500
	Aluminium - Casting Alloy	Not Hardenable < 12% Si	80	23	400-2000	400-2000	300-1800
		Hardenable < 12% Si	90	24	400-1100	300-1200	300-1800
		Not Hardenable < 12% Si	130	25	200-1000	200-700	170-1000
	(Bronze, Messing) / Copper And Copper Alloys (Bronze, Brass)	Free Cutting Alloys (1% Pb)		26	250-800		220-900
		Brass, Red Bronze		27	200-110		190-800
		Bronze	90	28	150-600		150-650
		Unleaded Copper	100	29	150-400		130-500
	Non Metallic Materials	Thermoset	100	29	100-220		70-200
		Fiber Reinforced Plastic		29	80-200		70-220
		Ebonite		30	100-300		90-280
S	Heat Resistant Alloys	Annealed	200	31	35-50		30-60
		Hardened	280	32	25-40		20-50
		Annealed	250	33	25-40		20-50
		Hardened	30 - 58 HRC	24	20-30		20-40
		Cast	1500 - 2000 Nmm ²	35	15-25		20-30
	Titanium Alloys	Pure Titanium	Rm 400	36	80-150		60-150
		Alpha- + Beta - Alloys	Rm 1050	37	40-120		30-70
H	Hardened Steel	Hardened And Tempered	55 HRC	38			
			60 HRC	39			
	Chilled Cast Iron	Cast	400	40			
	Hardened Cast Iron	Hardened And Tempered	55 HRC	40			

Cutting Speeds v_c [m/min]												
TM 5125 M25C	TM 5130 M30C	TM 5220 M20C	TP 2135 P35C	TP 3020 P20/K15C	TP 3120 P25C	TP 4025 P25/M20C	TP 5220 P20C	TP 5245 TP 5345 P45C	TU 3015 P/K/H15C	TU 5525 P/M25C	CDX09	TY1110 PKD
120 - 280			170 - 230	180 - 300	180 - 300	120 - 280	120 - 280	180 - 240	250 - 450	180 - 400		
130 - 250			150 - 180	150 - 220	150 - 220	130 - 250	130 - 250	150 - 200	220 - 400	170 - 350		
100 - 180			110 - 150	120 - 200	120 - 200	100 - 180	100 - 180	150 - 200	180 - 280	140 - 200		
80 - 200			160 - 190	160 - 250	160 - 250	100 - 230	100 - 230	170 - 200	240 - 400	120 - 300		
60 - 180			80 - 140	90 - 180	90 - 180	80 - 200	80 - 200	100 - 160	160 - 290	120 - 210		
			70 - 130	80 - 170	80 - 170	60 - 180	60 - 180	90 - 150	140 - 270	110 - 200		
			60 - 120	120 - 190	120 - 190	50 - 130	50 - 130	80 - 140	120 - 250	100 - 180		
			110 - 200	80 - 160	80 - 160	80 - 180	80 - 180	130 - 170	180 - 300	70 - 200		
			40 - 80	120 - 180	120 - 180	50 - 120	50 - 120	80 - 130	100 - 250	70 - 130		
100 - 180			130 - 170	100 - 170	100 - 170	100 - 180	100 - 180	140 - 180	160 - 300	80 - 200		
70 - 150			100 - 160	90 - 180	90 - 180	70 - 150	70 - 150	115 - 170	150 - 260	80 - 180		
120 - 220	100 - 200	120 - 220	130 - 200	140 - 200	140 - 200	120 - 220		140 - 200	200 - 260	170 - 250		
80 - 200	60 - 180	80 - 200	90 - 190	90 - 180	90 - 180	100 - 200		110 - 190		170 - 270		
60 - 140	40 - 90	60 - 140	70 - 150					80 - 150		120 - 210		
50 - 120		50 - 120	40 - 60	60 - 90	60 - 90			55 - 75		100 - 180	80 - 150	
				100 - 200	100 - 200	130 - 280			140 - 350	170 - 280	300 - 1000	
				90 - 180	90 - 180	120 - 270			130 - 300	170 - 250	300 - 800	
				100 - 180	100 - 180	110 - 260			190 - 300	150 - 230	300 - 450	
						100 - 250			120 - 250	150 - 190	250 - 350	
				150 - 220	150 - 220	90 - 250			180 - 450	120 - 230		
				100 - 180	100 - 180	90 - 250			150 - 300	120 - 190		
								100 - 500				250 - 3500
								100 - 400				250 - 1300
								100 - 350				250 - 3500
								100 - 800				250 - 1500
								80 - 250				200 - 500
												100 - 600
												100 - 1300
												250 - 2500
												60 - 320
												80 - 250
												60 - 180
20 - 40			20 - 45							20 - 40		
			20 - 40							15 - 36		
			8 - 22							10 - 30		
			4 - 16							5 - 20		
			4 - 16							5 - 20		
			80 - 140							80 - 140		
			15 - 35							20 - 40		
											80 - 200	
											40 - 180	
											40 - 180	

ISO DESIGNATION SYSTEM FOR INDEXABLE INSERTS

 80° C 55° D 75° E 86° M 35° V 85° A 82° B 55° K Hexagon H Rectangle L Octagon O Pentagon P Circle R Square S Triangle T Pentagon W	 3° A 5° B 7° C 15° D 20° E 25° F 30° G 0° N 11° P OTHERS O	 <table> <tr> <th colspan="3">Range of Tolerance</th><th rowspan="2">Class</th></tr> <tr> <th>d +/-</th><th>m +/-</th><th>s +/-</th></tr> <tr><td>0.025</td><td>0.005</td><td>0.025</td><td>A</td></tr> <tr><td>0.025</td><td>0.013</td><td>0.025</td><td>C</td></tr> <tr><td>0.025</td><td>0.025</td><td>0.025</td><td>E</td></tr> <tr><td>0.013</td><td>0.005</td><td>0.025</td><td>F</td></tr> <tr><td>0.025</td><td>0.025</td><td>0.05 - 0.13</td><td>G</td></tr> <tr><td>0.013</td><td>0.013</td><td>0.025</td><td>H</td></tr> <tr><td>0.05 - 0.15</td><td>0.005</td><td>0.025</td><td>J</td></tr> <tr><td>0.05 - 0.15</td><td>0.013</td><td>0.025</td><td>K</td></tr> <tr><td>0.05 - 0.15</td><td>0.025</td><td>0.025</td><td>L</td></tr> <tr><td>0.05 - 0.15</td><td>0.08 - 0.2</td><td>0.05 - 0.13</td><td>M</td></tr> <tr><td>0.05 - 0.15</td><td>0.08 - 0.2</td><td>0.025</td><td>N</td></tr> <tr><td>0.08 - 0.25</td><td>0.13 - 0.38</td><td>0.13</td><td>U</td></tr> </table>	Range of Tolerance			Class	d +/-	m +/-	s +/-	0.025	0.005	0.025	A	0.025	0.013	0.025	C	0.025	0.025	0.025	E	0.013	0.005	0.025	F	0.025	0.025	0.05 - 0.13	G	0.013	0.013	0.025	H	0.05 - 0.15	0.005	0.025	J	0.05 - 0.15	0.013	0.025	K	0.05 - 0.15	0.025	0.025	L	0.05 - 0.15	0.08 - 0.2	0.05 - 0.13	M	0.05 - 0.15	0.08 - 0.2	0.025	N	0.08 - 0.25	0.13 - 0.38	0.13	U	  A  C  F  G   H  J   M   N  Q   R   T  U   W Special Shape X
Range of Tolerance			Class																																																							
d +/-	m +/-	s +/-																																																								
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0.025	0.025	0.05 - 0.13	G																																																							
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0.08 - 0.25	0.13 - 0.38	0.13	U																																																							
L	D	H	T																																																							
Shape	Clearance Angle	Tolerance	Type of Inserts																																																							

								F Sharp				
d (mm) 06 08 10 12 16 20 25 32						E Rounded						
				T Chamfered		S Chamfered and rounded						
mm	d = IC (inch) (mm)		mm	s (mm)	Index	1. Kr	2. alpha					
06	5/32	3.96	03	1.59	01	A 45°	A 3°					
09	7/32	5.55	05	1.98	T1	D 60°	B 5°					
11	1/4	6.35	06	2.38	02	E 75°	C 7°					
16	3/8	9.52	09	3.18	03	F 85°	D 15°					
22	1/2	12.7	12	3.97	T3	P 90°	E 20°					
27	5/8	15.8	15	4.76	04	OTHERS	F 25°					
33	3/4	19.0	19	5.56	05		G 30°					
44	1	25.4	25	6.35	06		N 0°					
				7.94	07		P 11°					
				9.52	09		Z					
				11.11	11		r (mm)	Index				
				12.70	12		0.2	02				
							0.4	04				
							0.8	08				
							1.2	12				
							1.6	16				
							2.4	24				
							0	00				

00 : Round insert (inch)
M0 : Round insert (metr.)

00 : Round insert (inch)
M0 : Round insert (metr.)

15

04

PD

F

R

Length of Cutting
Edge

Height of Cutting
Edge

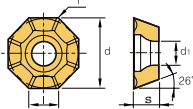
Chamfer or Corner
Radius

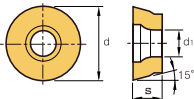
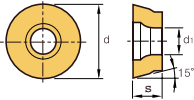
Cutting Edge
Preparation

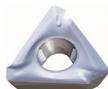
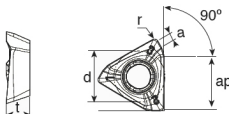
Hand of Tool

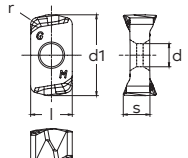
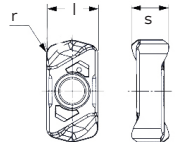
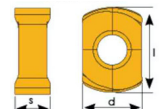
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[illegible][illegible]

Steel	A (P)		✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚			Machining Types	● Continous Cutting							
Stainless Steel	R (M)		✚	✚	✚		✚		✚	✚	✚	●	✚	✚				✚ Interrupted Cutting							
Cast Iron	F (K)	✚																							
Non-fer Metall	N													✚	✚										
Heatress Alloy, Titan All	S					✚				●			✚	✚											
Hardened Steel	H																	✚ General Cutting							
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders		
		MK 2015	MM 5130	MM6040	MP 2130	MP 2135	MP 5245	MP 5330	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l	Ø d	s			Ø d1	r
 OFKT	05 T3 05 SN-M11				o														5.20	12.70	3.97	4.40	0.50		

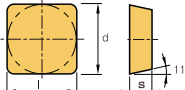
Steel		A (P)		✚	✚✚	✚✚✚	✚✚✚✚	✚✚✚✚✚	✚✚✚✚✚✚	✚✚✚✚✚✚✚	✚✚✚✚✚✚✚✚	✚✚✚✚✚✚✚✚✚			✚✚	Machining Types	● Continous Cutting							
Stainless Steel		R (M)		✚✚	✚✚✚	✚✚✚	✚✚✚✚	✚✚✚✚✚	✚✚✚✚✚✚	✚✚✚✚✚✚✚	✚✚✚✚✚✚✚✚	✚✚✚✚✚✚✚✚✚					✚✚ Interrupted Cutting							
Cast Iron		F (K)	✚✚														✚✚ General Cutting							
Non-fer Metall		N													✚✚✚✚									
Heatress Alloy, Titan All		S					✚✚			●		✚✚✚✚												
Hardened Steel		H																						
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders	
		MK 2015	MM 5130	MM6040	MP 2130	MP 2135	MP 5245	MP 5330	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l	Ø d	s			Ø d1
 RDHX	08 03 MOT		○															-	8.00	3.18	3.4	-		
	10 03 MOT		●															-	10.0	3.18	4.4	-		
	12 T3 MOT		●															-	12.0	4.76	4.4	-		
	16 05 M0T		○															-	16.00	5.00	5.45	-		
 RDMT	08 03 MOS		○															-	7.00	2.38	2.75	-		
	10 T3 MOS		●															-	10.00	3.18	3.90	-		
	12 04 MOS		●															-	12.00	3.97	3.90	-		
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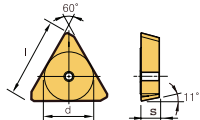
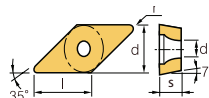
Steel		A (P)		✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚			Machining Types	● Continous Cutting					
Stainless Steel		R (M)		✚	✚	✚		✚		✚	✚	✚	●	✚	✚					✚ Interrupted Cutting					
Cast Iron		F (K)	✚																	✚ General Cutting					
Non-fer Metall		N															✚	✚							
Heatress Alloy, Titan All		S					✚				●			✚	✚										
Hardened Steel		H																							
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders		
		MK 2015	MM 5130	MM6040	MP 2130	MP 2135	MP 5245	MP 5230	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	Ø d	a	t			r	ap
 3PKT	10 04 08 - MM		●					●											6.90	1.30	4.00	0.40	7.00		
	15 05 08 - MM		●					●											10.70	1.60	5.00	0.80	11.0		

	Steel	A (P)		✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚				✚	Machining Types	● Continous Cutting				
	Stainless Steel	R (M)		✚	✚	✚		✚		✚	✚	✚	●	✚	✚						✚ Interrupted Cutting				
	Cast Iron	F (K)	✚																		✚ General Cutting				
	Non-fer Metall	N																✚	✚						
	Heatress Alloy, Titan All	S					✚					●			✚	✚									
	Hardened Steel	H																							
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders		
		MK 2015	MM 5130	MM6040	MP 2130	MP 2135	MP 5245	MP 5230	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l	Ø d	s			Ø d1	r
 LOGX	03 03 10 HIGH FEED		●					●											6.2	3.96	3.45	12.0	1.0		
 LNKX	03 03 12 HIGH FEED		●					●											6.0	3.30	4.29	11.9	1.20		
 KLMP	06 03 R		●					●											9.00	6.39	3.73	-	-		

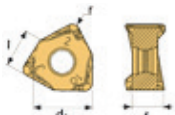
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Steel	A (P)		✚	✚✚	✚✚	✚✚	✚✚	✚✚	✚✚	✚✚	✚✚		✚	Machining Types	● Continous Cutting										
Stainless Steel	R (M)	✚✚	✚✚	✚✚	✚✚	✚✚	✚✚	✚✚	●	✚✚					✚ Interrupted Cutting										
Cast Iron	F (K)	✚✚																							
Non-fer Metall	N											✚✚	✚✚												
Heatress Alloy, Titan All	S				✚✚			●		✚✚	✚✚														
Hardened Steel	H																								
Insert	Part Number	Coated										Uncoated			Dimension					Geometry	Toolholders				
		MK 2015	MM 5130	MM6040	MP 2130	MP 2135	MP 5245	MP 5330	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l			Ø d	s	Ø d1	r
 SPKN	12 03 EDR-5								•										12.70	12.70	3.18	-	-		
	12 03 EDTR												o						12.70	12.70	3.18	-	-		

Steel	A (P)		+	+	+	+	+	+	+	+	+	+	+	+			Machining Types	● Continuous Cutting							
Stainless Steel	R (M)		+	+	+		+		+	+	+	+	+					⊞ Interrupted Cutting							
Cast Iron	F (K)	⊞																⊞ General Cutting							
Non-fer Metall	N													⊞	⊞										
Heatress Alloy, Titan All	S					+				●		⊞	+												
Hardened Steel	H																								
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders		
		MK 2015	MM 5125	MM5130	MP 2130	MP 2135	MP 5245	MP 5330	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l	Ø d	s			Ø d1	r
 TPKN	16 03 PDR-5		○	○														●	16.00	9.53	3.18	-	-		
	16 03 PDR		●	●														●	16.00	9.53	3.18	-	-		
	16 03 PDTR		○	○									○						16.00	9.53	3.18	-	-		
	22 04 PDR-5		●	●					○										22.00	12.70	4.76	-	-		
	22 04 PDR		●	●					○					○			○		22.00	12.70	4.76	-	-		
	22 04 PDTR		●	●															22.00	12.70	4.76	-	-		
 VCCT	22 05 30-ALF														○				20.10	12.60	5.56	5.45	3.00		

WN□□

Steel	A (P)			✚		✚	✚	✚	✚	✚	✚	✚	✚	✚				✚	Machining Types	● Continous Cutting						
Stainless Steel	R (M)		✚	✚	✚		✚		✚	●	✚	●	✚	✚				✚		✚ Interrupted Cutting						
Cast Iron	F (K)	✚																		✚ General Cutting						
Non-fer Metall	N																✚	✚								
Heatress Alloy, Titan All	S					✚				●			✚	✚												
Hardened Steel	H																									
Insert	Part Number	Coated												Uncoated			Dimension					Geometry	Toolholders			
		MK 2015	MM 5130	MM 5140	MM6040	MP 2130	MP 2135	MP 5245	MP 5330	MP 5430	MP 6025	MP 6045	MP 6125	MU 5130+	MU5230+	MU 5430	MK 1110	MK 1210	MP 1225	l	Ø d			s	Ø d1	r
 WDMU	08 06 08 - GM		●												o					-	12.7	6.40	6.40	-		

ISO	P						M				K				
Material	high		medium		low	intermittent cutting	high	medium	low		high	medium		low	
	P01	P10	P20	P30	P40	P50	M10	M20	M30	M40	K01	K10	K20	K30	K40
Coated Carbide			MP 2130				MP 2130								
			MP 1225						MP 2135						
			MP 2135						MP 5330						
			MP 6025						MP 6025						
			MP 6125						MP 6125						
			MP 5330										MK 2015		
			MP 5430						MU 5130+ MU 5230+ MU 5430				MU 5130+ MU 5230+		
			MP 5245 MP 6045						MM 5130+						
			MU 5130+ MU 5230+ MU 5430											MM 5130	
										MM 6040					
Cermet															
Uncoated Carbide											MK 1110				
											MK 1210				

SNMX 1206 ANN -

M 20 M M 60 25

Application	A	Aluminium
	C	Copying
	M	Medium Cutting
	R	Roughing
	H	Heavy Roughing
	S	Medium Cutting of Stainless Steel
	F	Finishing

Application 1	T	Turning
	M	Milling
	G	Grooving
	T	Threading
	D	Drilling

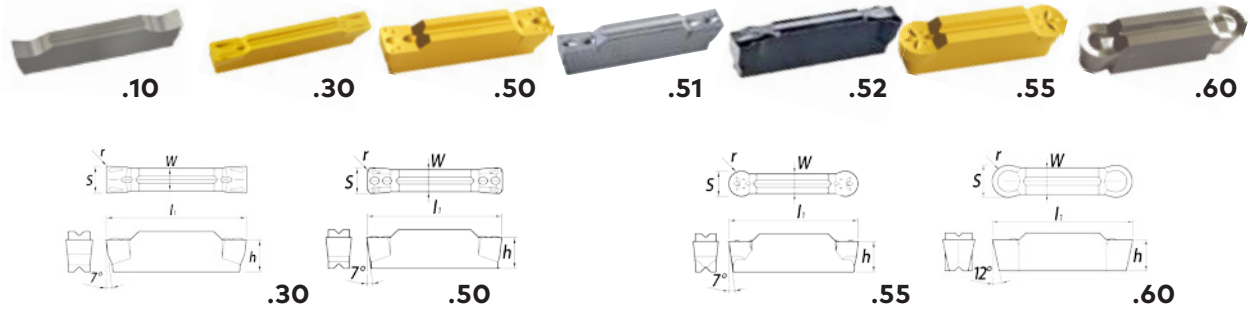
Application 2	P	Steel
	M	Stainless Steel
	K	Aluminium Non Metallic Materials
	S	Heat Resistant Alloys
	H	Hardened Steel
	U	All-Purpose
	W	DIA
	X	CBN
	Y	PKD
	Z	Cermet
	D	DLC
	C	Ceramics

Serial-No.	11 - 20	Uncoated
	21 - 50	CVD
	51 - 99	PVD

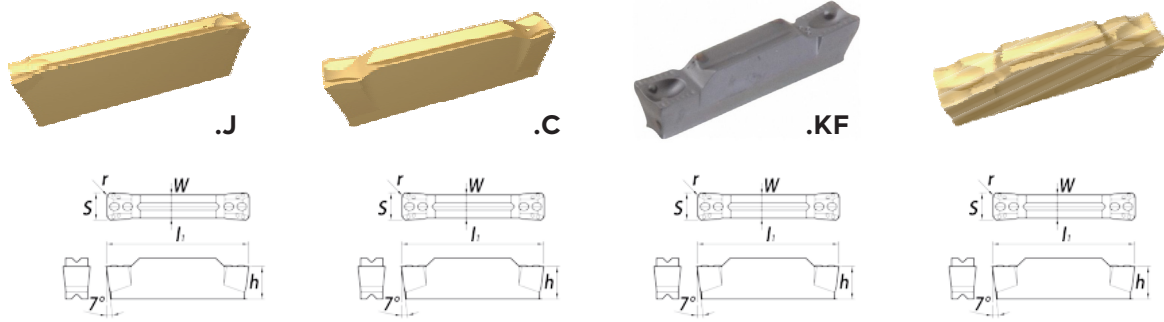
ISO	10	
	20	
	30	
		

	Material	Alloy	Hardness HB	VDI 3323	Cutting Speeds v_c [m/min]			
					MK110 (K10F) MK1210	MK2015 (K15C)	MM5130 (M30C)	MM 5140 (M40C)
A (P)	Mild Steel	Annealed < 0,15% C	125	1			80 - 250	
		Annealed 0,15% - 0,45% C	150 - 250	2				
		Heat Treated > 0,45% C	300	3				
	Lower Alloyed Steel	Annealed	180	6				
		Heat Treated	275	7				
		Heat Treated	300	8				
		Heat Treated	350	9				
	Highly Alloyed Steel	Annealed	200	10				
		Heat Treated	350	11				
	Corrosion-Resistant Steel	Annealed	200	12				
		Heat Treated	350	13				
R (M)	Stainless Steel	Ferritic, Martensitic, Annealed	200	14			130 - 240	
		Austenitic	180	14			130 - 190	
		Duplex	230 - 260	14			60 - 210	
		Austenitic, Ferritic	330	14			80 - 150	
F (K)	Grey Cast Iron	Pearlitic, Ferritic	180	15		80 - 180		
		Pearlitic, Martensitic	260	16		70 - 160		
	Nodular Cast Iron	Ferritic	160	17		90 - 150		
		Pearlitic	250	18		80 - 140		
	Malleable Cast Iron	Ferritic	130	19		100 - 160		
		Pearlitic	230	20		90 - 150		
N	Aluminium - Forging Alloy	Not Hardenable	60	21	150 - 1000			
		Hardenable	100	22	100 - 800			
	Aluminium - Casting Alloy	Not Hardenable < 12% Si	80	23	100 - 800			
		Hardenable < 12% Si	90	24	100 - 650			
		Not Hardenable < 12% Si	130	25	80 - 300			
	(Bronze, Messing) / Copper And Copper Alloys (Bronze, Brass)	Free Cutting Alloys (1% Pb)	-	26	150 - 800			
		Brass, Red Bronze	-	27	150 - 600	250 - 800		
		Bronze	90	28	100 - 500			
		Unleaded Copper	100	29	150 - 800			
	Non Metallic Materials	Thermoset	100	29	60 - 150			
		Fiber Reinforced Plastic	-	29	60 - 120			
		Ebonite	-	30	60 - 150			
S	Heat Resistant Alloys	Annealed	200	31			30 - 80	
		Hardened	280	32			30 - 70	
		Annealed	250	33			25 - 70	
		Hardened	30 - 58 HRC	24			30 - 60	
		Cast	1500 - 2000 Nmm ²	35			25 - 60	
	Titanium Alloys	Pure Titanium	Rm 400	36			50 - 130	
		Alpha- + Beta - Alloys	Rm 1050	37			30 - 90	
H	Hardened Steel	Hardened And Tempered	55 HRC	38				
			60 HRC	39				
	Chilled Cast Iron	Cast	400	40				
	Hardened Cast Iron	Hardened And Tempered	55 HRC	40				

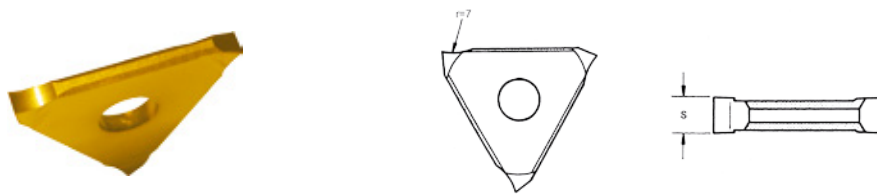
[illegible]



Part Number	Stock				s mm	r mm	l _i mm	w	h	Toolholders Type
	GK 1110	GK 1210	GP 2120	GP 5125						
216. 0150. 10	o				1.5	0.15	16	1.2	3.5	.015
216. 0150. 30				o						
216. 0200. 10	o				2.0	0.2	16	1.6	3.5	.02
216. 0200. 30				•						
216. 0200. 51	•					1.0				
216. 0200. 55				•						
218. 0250. 10	o				2.5	0.2	18.5	2.0	3.8	.025
218. 0250. 50				o						
222. 0300. 10	o				3.0	0.4	21	2.35	4.8	.03
222. 0300. 50				•						
222. 0300. 51	•									
222. 0300. 52										
222. 0300. 55				•						
222. 0400. 10	o				4.0	0.4	3.3			.04
222. 0400. 50				•						
222. 0400. 51	•									
222. 0400. 55				•						
226. 0500. 10	o				5.0	0.8				
226. 0500. 50				•						
226. 0500. 55				•		2.5				
226. 0500. 60	o									
226. 0600. 10	o				6.0	0.8	26	5.0	5.8	.06
226. 0600. 50				•						
226. 0600. 55				•		2.5				
226. 0600. 60	o									
232. 0800. 10	o				8.0	0.8	31	6.0	6.5	.08
232. 0800. 50				o						
232. 0800. 51	o									
232. 0800. 60	o									

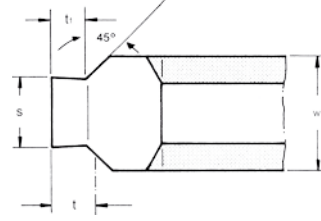


Part Number	Stock				s mm	r mm	l mm	w	h	Toolholders Type
	GK 1110	GK 1210	GP 2120	GP 5125						
KDGN. 2202. J				•	2.20	0.20	19.8	1.90	-	
KDGR. 2202. J - 6D				•	2.20	0.20	20.6	1.84	6.00	
KDGR. 2202. J - 15D				•	2.20	0.20	20.3	1.84	15.0	
KDGN. 3102. C				•	3.10	0.20	20.0	2.40	-	
GRP. 300. KF				•	3.00	0.30	19.0	2.10	3.38	
GRP. 400. KF				•	4.00	0.40	18.93	2.85	5.58	
GRP. 500. KM				•	5.00	0.40	19.0	3.40	5.75	
KDJ. 200				o	2.00	0.20	20.0	1.70	3.90	
KDJ. 300				o	3.00	0.20	20.0	2.40	4.05	
KDJ. 400				o	4.00	0.30	20.0	3.00	4.05	



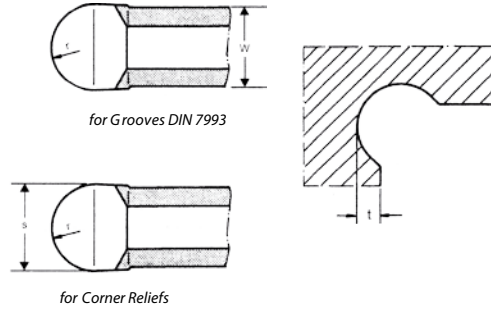
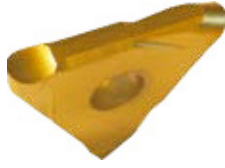
For Circlips DIN 471/472

Part Number	Stock			GROOVE DIN-No	s -0.05 mm	Toolholders Type
	GK 1120	GK 5320	GP 5125			
312. 0050. 00 - D	o	o	•	0.5	0.57	.01
312. 0060. 00 - D	o	o	•	0.6	0.67	
312. 0070. 00 - D	o	o	•	0.7	0.77	
312. 0080. 00 - D	o	o	•	0.8	0.87	
312. 0090. 00 - D	o	o	•	0.9	0.97	
312. 0100. 00 - D	o	o	•	1.0	1.07	
312. 0110. 00 - D	o	o	•	1.1	1.24	
312. 0130. 00 - D	o	o	•	1.3	1.44	
312. 0160. 00 - D			•	1.6	1.74	
312. 0185. 00 - D			•	1.85	1.99	
312. 0215. 00 - D			•	2.15	2.29	.02
312. 0265. 00 - D			•	2.65	2.79	
312. 0315. 00 - D	o	o	•	3.15	3.29	.03
312. 0415. 00 - D		o	o	4.15	4.29	.04
312. 0515. 00 - D			o	5.15	5.29	



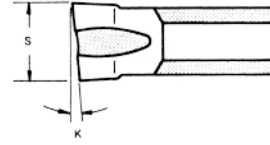
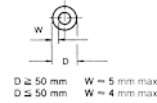
For Circlips DIN 471/472, With Chamfers

Part Number	Stock			GROOVE DIN-No	s -0.05 mm	t ₁ -0.05 mm	t mm	w mm	Toolholders Type	
	GK 1120	GK 5320	GP 5125							
312. 1101. 25 - D				1.1	1.24	0.19	0.20	2.5	.02	
312. 1102. 25 - D				1.1	1.24	0.24	0.25			
312. 1103. 25 - D				1.1	1.24	0.29	0.30			
312. 1104. 25 - D				1.1	1.24	0.33	0.35			
312. 1105. 25 - D				1.1	1.24	0.36	0.40			
312. 1306. 25 - D				1.3	1.44	0.45	0.55			
312. 1607. 33 - D				1.6	1.74	0.60	0.70	3.3	.03	
312. 1608. 33 - D				1.6	1.74	0.75	0.85			
312. 1609. 33 - D				1.6	1.74	0.85	1.00			
312. 1810. 33 - D				1.85	1.99	0.85	1.00			
312. 1812. 33 - D				1.85	1.99	1.10	1.25			
312. 2115. 43 - D				2.15	2.29	1.35	1.50	4.3	.04	
312. 2616. 43 - D				2.65	2.79	1.35	1.50			
312. 2617. 43 - D				2.65	2.79	1.60	1.75			
312. 3118. 53 - D				3.15	3.29	1.60	1.75	5.3		
312. 4120. 53 - D				4.15	4.29	1.85	2.00			
312. 4125. 53 - D				4.15	4.29	2.35	2.50			
312. 5130. 63 - D				5.15	5.29	2.85	3.00	6.3		



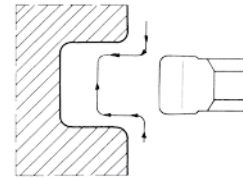
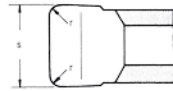
Full Radius

Part Number	Stock			r mm	s -0.05 mm	t mm	w mm	Toolholders Type
	GK 1120	GK 5320	GP 5125					
For Grooves DIN 7993								
312. 1305. 00 - D				0.5	1.0	0.7	1.3	.01
312. 1306. 00 - D				0.6	1.2	0.8	1.3	
312. 0009. 18 - D				0.9	1.8	4	1.2	
312. 0011. 22 - D				1.1	2.2	6	1.6	
312. 0014. 28 - D				1.4	2.8	6	2.2	.02
312. 0018. 36 - D				1.8	3.6	6	3.0	.03
For Corner Reliefs								
312. 0010. 20 - D			o	1.0	2.0	0.7	1.4	.01
312. 0015. 30 - D			o	1.5	3.0	1.0	2.4	.02
312. 0020. 40 - D				2.0	4.0	1.2	3.4	.03
312. 0025. 50 - D			o	2.5	5.0	1.5	4.4	.04
312. 0030. 60 - D				3.0	6.0	1.8	5.4	
For CNC Shape Grooving								
312. 0100. 05 - D			o	0.50	1.0		0.84	.01
312. 0150. 07 - D				0.75	1.5		1.2	
312. 0200. 10 - D			o	1.00	2.0		1.4	
312. 0250. 12 - D				1.25	2.5		1.9	
312. 0300. 15 - D				1.50	3.0		2.4	.02
312. 0400. 20 - D				2.00	4.0		3.4	.03



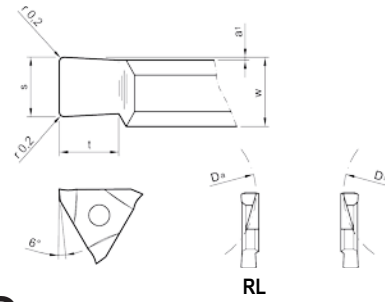
For Parting-Off R/L 312-D

Part Number	Stock						S -0.05 mm	K	Toolholders Type
	GK 1120		GK 5320		GP 5125				
	R	L	R	L	R	L			
R/L 312. 0516. 00 - D					o		1.6	5°	.01
R/L 312. 0521. 00 - D							2.1		.02



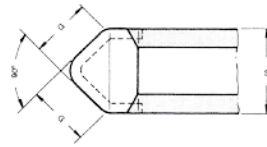
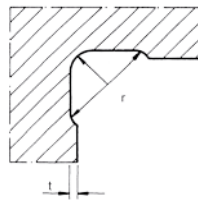
For Finishing

Part Number	Stock			s -0.05 mm	r mm	Toolholders Type
	GK 1120	GK 5320	GP 5125			
312. 0100. 02 - D		o	•	1.0	0.2	.01
312. 0150. 02 - D			o	1.5	0.2	
312. 0200. 02 - D		o	o	2.0	0.2	
312. 0200. 04 - D				2.0	0.4	
312. 0250. 02 - D				2.5	0.2	
312. 0250. 04 - D				2.5	0.4	
312. 0300. 02 - D				3.0	0.2	.02
312. 0300. 06 - D				3.0	0.6	
312. 0300. 08 - D				3.0	0.8	
312. 0400. 02 - D				4.0	0.2	.03
312. 0400. 08 - D				4.0	0.8	
312. 0400. 12 - D				4.0	1.2	



For Face Grooving R/L 312-D

Part Number	Stock						s -0.05 mm	W	t _{max}	Outer-Ø Da Ø≥ mm	Toolholders Type
	GK 1120		GK 5320		GP 5125						
	R	L	R	L	R	L					
R/L 312. 2015. 02 - D							1.5	2.7	2.0	20	.02
R/L 312. 3020. 02 - D							2.0	2.7	3.0	30	
R/L 312. 3030. 02 - D							3.0	3.7	3.0	30	.03



For Corner Reliefs Similar to DIN 509 Type F

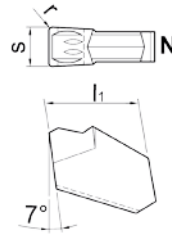
Part Number	Stock			r mm	t mm	G mm	s +/-0.05 mm	Toolholders Type
	GK 1120	GK 5320	GP 5125					
312. 0602. 24 - D				0.6	0.2	1.7	2.4	.02
312. 0603. 33 - D				0.6	0.3	2.3	3.3	
312. 1002. 30 - D				1.0	0.2	2.1	3.0	.03
312. 1004. 50 - D				1.0	0.4	3.6	5.0	
312. 1603. 50 - D				1.6	0.3	3.6	5.0	.04



LGTN

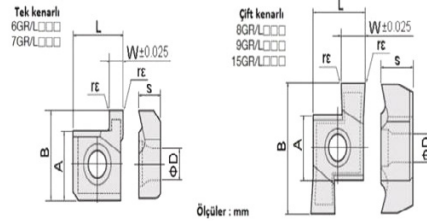
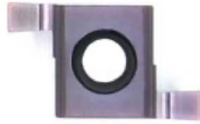


NGTN



Inserts for Parting-off

Part Number	Stock		s ±0.05-0.10 mm	L ₁ ±0.10 mm	r mm	K	
	GP 2135	GP 2235					
LGTL - 2			2.2	8.8	0.15	8°	LGIH..-2
LGTN - 2	o					0°	
LGTR - 2	o					8°	
LGTL - 3		•	3.1	10.8	0.18	8°	LGIH..-3
LGTN - 3		•				0°	
LGTR - 3		•				8°	
LGTL - 4		•	4.1	10.8	0.23	8°	LGIH..-4
LGTN - 4		•				0°	
LGTR - 4		•				8°	
LGTN - 5		•	5.1	11.0	0.23	0°	LGIH..-5
LGTN - 6	o	•	6.4	11.0	0.35	0°	LGIH..-6
NGTL - 2		•	2.2	8.8	0.20	8°	NGIH..-2
NGTN - 2		•				0°	
NGTR - 2		•				8°	



Part Number	Stock		W	A	B	T	D	L	r
	TU5130	TU5330							
6GR - 100	o	•	1.00	4.76	6.44	2.34	2.30	5.56	0.2
6GR - 150	o	•	1.50						
6GR - 200	o	•	2.00						
7GR - 100	o	•	1.00	5.56	7.36	3.08	2.58	5.56	0.2
7GR - 150	o	•	1.50						
7GR - 200	o	•	2.00						
8GR - 150	o	•	1.50		10.16	3.87	2.58	6.15	
8GR - 200	o	•	2.00						
8GR - 250	o	•	2.50						
8GR - 300	o	•	3.00						
8GR - 350	o	•	3.50						
9GR - 100	o	•	1.00	6.35	12.95	4.66	2.86	7.74	0.2
9GR - 150	o	•	1.50						
9GR - 200	o	•	2.00						
9GR - 250	o	•	2.50						
9GR - 300	o	•	3.00						
9GR - 350	o	•	3.50						

Internal Grooving		
Bore - Ø mm	Depth of Groove, max. mm	Type
≥ 20	3.0 / 4.7	217 - D
≥ 20	3.5 / 4 / 5 / 6 / 6.5 / 8 / 10	216 - D / 218 - D / 222 - D / 226 - D / 232 - D
≥ 46	11.5 / 15	229 - D
≥ 46	2 / 3 / 4 / 5	312 - D

External Grooving		
Width of Groove mm	Depth of Groove, max. mm	Type
0.5 - 5.3	4	217 - D
0.5 - 6.3	8	312 - D
2 - 6	12 / 20 / 25	229 - D
1.5 - 8	12 / 14.5 / 18 / 23 / 25	216 - D / 218 - D / 222 - D / 226 - D / 232 - D

Face Grooving			
Outer - Ø of Groove mm	Width of Groove mm	Depth of Groove mm	Type
≥ 20	1.5	2	312 - D
≥ 30	2.0 / 3.0	3	312 - D
34 - 150	3.0	17	222 - D
50 - 150	4.0	22	
70 - 200	5.0	25	226 - D

Material		Alloy	Cutting Speeds v _c [m/min]						
			GK 1110	GK 1120	GK 5320	GP 2120	GP 2135 GP 2235	GP5125	GM 5130
A (P)	Mild Steel	Annealed < 0,15% C	-	-	120 - 200	120 - 200	80 - 160	120 - 200	100 - 180
		Annealed 0,15% - 0,45% C	-	-	100 - 200	100 - 200	80 - 160	100 - 200	100 - 180
		Heat Treated > 0,45% C	-	-	90 - 200	90 - 180	70 - 150	90 - 180	80 - 160
	Alloyed Steel	Low	-	-	100 - 200	100 - 200	100 - 180	100 - 200	100 - 200
		Medium	-	-	90 - 160	90 - 160	80 - 140	90 - 160	80 - 150
		High	-	-	70 - 100	70 - 100	70 - 100	70 - 100	70 - 100
R (M)	Stainless Steel	Austenitic	-	-	50 - 160	50 - 160	30 - 140	50 - 160	30 - 150
		Martensitic	-	-	50 - 200	50 - 200	30 - 160	50 - 200	30 - 180
F (K)	Grey Cast Iron		60 - 100	60 - 90	70 - 160	-	-	70 - 160	-
N	Aluminium	Not Hardenable	800 - 100	700 - 850	200 - 1200	-	-	200 - 1200	-
		Hardenable	250 - 450	250 - 400	250 - 800	-	-	250 - 800	-
		> 12% Si	200 - 300	200 - 250	400 - 1000	-	-	400 - 1000	-
	Bronze, Brass, Red Brass		90 - 200	90 - 180	90 - 200	-	-	90 - 200	-
S	Heat Resistant Alloys, Ni-base		-	20 - 60	30 - 80	-	-	30 - 80	25 - 60
H	Hardened Steel		10 - 20	-	-	-	-	-	-

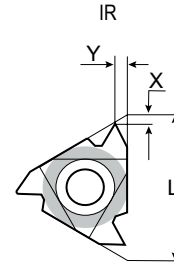
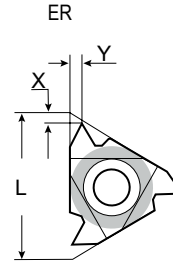
Type of Insert	Feeds (acc. to width of insert) [mm/rev]
217 - D	0.02 - 0.10
216 / 218 / 222 / 226 / 232-D	0.06 - 0.24
229 - D	0.06 - 0.20
312 - D	0.02 - 0.15

ISO	P						M				K				
Cutting Speeds															
Material	high		medium		low		intermittent cutting		high		medium		low		
	P01	P10	P20	P30	P40	P50	M10	M20	M30	M40	K01	K10	K20	K30	K40
Coated Carbide			GP 5125									GP 5125			
								GM 5130				GK 5320			
			GP 2120									GP 2120			
				GP 2235											
				GP 2135											
Uncoated Carbide												GK 1110			
												GK 1120			



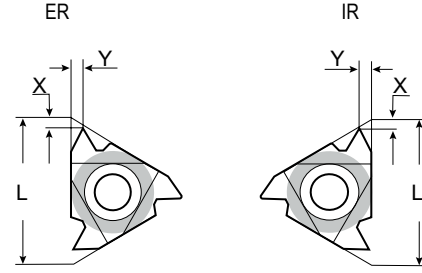
Grooving External/Internal

Part Number	Stock	Part Number	Stock	IC mm	L mm	X mm	Y mm
RH Inserts	TU 5330	LH Inserts	TU 5330				
60° External		60° External		9.525 (3/8")	16		
16 ER -1.00 - T 1.30	•	16 EL -1.00 - T 1.30	○			1.00	1.30
16 ER -1.10 - T 1.30	•	16 EL -1.10 - T 1.30	○			1.10	1.30
16 ER -1.20 - T 1.60	•	16 EL -1.20 - T 1.60	○			1.20	1.60
16 ER -1.40 - T 1.60	•	16 EL -1.40 - T 1.60	○			1.40	1.60
16 ER -1.50 - T 1.60	•	16 EL -1.50 - T 1.60	○			1.50	1.60
16 ER -1.60 - T 1.60	•	16 EL -1.60 - T 1.60	○			1.60	1.60
16 ER -1.70 - T 1.85	•	16 EL -1.70 - T 1.85	○			1.70	1.85
16 ER -1.80 - T 1.85	•	16 EL -1.80 - T 1.85	○			1.80	1.85
16 ER -1.85 - T 1.85	•	16 EL -1.85 - T 1.85	○			1.85	1.85
16 ER -2.00 - T 1.85	•	16 EL -2.00 - T 1.85	○			2.00	1.85
16 ER -2.15 - T 2.00	•	16 EL -2.15 - T 2.00	○			2.15	2.00
16 ER -2.30 - T 2.00	•	16 EL -2.30 - T 2.00	○			2.30	2.00
16 ER -2.50 - T 2.00	•	16 EL -2.50 - T 2.00	○			2.50	2.00
16 ER -2.65 - T 2.20	•	16 EL -2.65 - T 2.20	○			2.65	2.20
60° External		60° External		9.525 (3/8")	16		
16 IR -1.00 - T 1.30	•	16 IL -1.00 - T 1.30	○			1.00	1.30
16 IR -1.10 - T 1.30	•	16 IL -1.10 - T 1.30	○			1.10	1.30
16 IR -1.20 - T 1.60	•	16 IL -1.20 - T 1.60	○			1.20	1.60
16 IR -1.40 - T 1.60	•	16 IL -1.40 - T 1.60	○			1.40	1.60
16 IR -1.50 - T 1.60	•	16 IL -1.50 - T 1.60	○			1.50	1.60
16 IR -1.60 - T 1.60	•	16 IL -1.60 - T 1.60	○			1.60	1.60
16 IR -1.70 - T 1.85	•	16 IL -1.70 - T 1.85	○			1.70	1.85
16 IR -1.80 - T 1.85	•	16 IL -1.80 - T 1.85	○			1.80	1.85
16 IR -1.85 - T 1.85	•	16 IL -1.85 - T 1.85	○			1.85	1.85
16 IR -2.00 - T 1.85	•	16 IL -2.00 - T 1.85	○			2.00	1.85
16 IR -2.15 - T 2.00	•	16 IL -2.15 - T 2.00	○			2.15	2.00
16 IR -2.30 - T 2.00	•	16 IL -2.30 - T 2.00	○			2.30	2.00
16 IR -2.50 - T 2.00	•	16 IL -2.50 - T 2.00	○			2.50	2.00
16 IR -2.65 - T 2.20	•	16 IL -2.65 - T 2.20	○			2.65	2.20



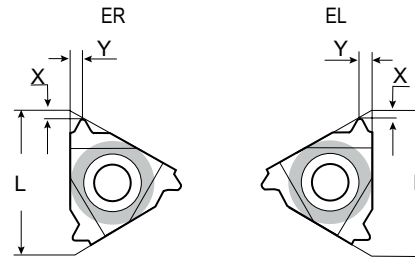
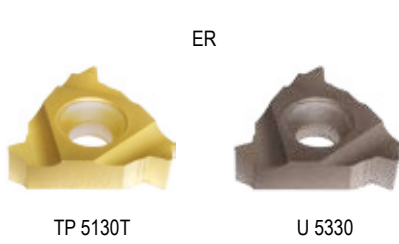
External/Internal Thread

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
60° External			60° External						
11 ER - T - A60	•		11 EL - T - A60			0.5 - 1.5	11	0.8	0.9
16 ER - T - A60	•	•	16 EL - T - A60	•		0.5 - 1.5	16	0.8	0.9
16 ER - T - G60	•	•	16 EL - T - G60	•		1.75 - 3.0	16	1.2	1.7
16 ER - T - AG60	•	•	16 EL - T - AG60	•		0.5 - 3.0	16	1.2	1.7
22 ER - T - N60	•		22 EL - T - N60			3.5 - 5.0	22	1.7	2.5
27 ER - T - Q60	•		27 EL - T - Q60			5.5 - 6.0	27	2.1	3.1
60° Internal			60° Internal						
06 IR - T - A60	○		06 IR - T - A60			0.5 - 1.25	6	0.6	0.6
08 IR - T - A60	○		08 IR - T - A60			0.5 - 1.5	8	0.6	0.7
11 IR - T - A60	•	○	11 IR - T - A60	•		0.5 - 1.5	11	0.8	0.9
16 IR - T - A60	•	•	16 IR - T - A60	•		0.5 - 1.5	16	0.8	0.9
16 IR - T - G60	•	•	16 IR - T - G60	•		1.75 - 3.0	16	1.2	1.7
16 IR - T - AG60	•	•	16 IR - T - AG60	•		0.5 - 3.0	16	1.2	1.7
22 IR - T - N60	•		22 IR - T - N60			3.5 - 5.0	22	1.7	2.5
27 IR - T - Q60	○		27 IR - T - Q60			5.5 - 6.0	27	1.8	2.7



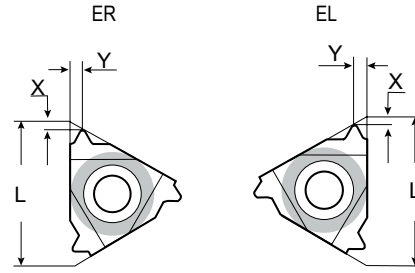
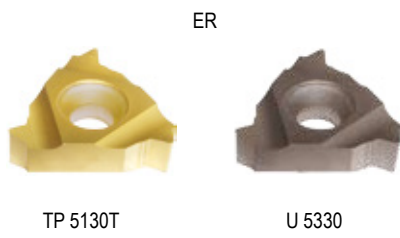
External/Internal Thread

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
55° External			55° External						
11 ER - T - A55	○		11 EL - T - A55			48 - 16	11	0.8	0.9
16 ER - T - A55	●	●	16 EL - T - A55	●		48 - 16	16	0.8	0.9
16 ER - T - G55	●	●	16 EL - T - G55	●		14 - 8	16	1.2	1.7
16 ER - T - AG55	●	●	16 EL - T - AG55	●		48 - 16.8	16	1.2	1.7
22 ER - T - N55	●		22 EL - T - N55			7 - 5	22	1.7	2.5
27 ER - T - Q55	●		27 EL - T - Q55			4.5 - 4	27	2.0	2.9
55° Internal			55° Internal						
06 IR - T - A55	○		06 IL - T - A55			48 - 20	6	0.6	0.6
08 IR - T - A55	○		08 IL - T - A55			48 - 16	8	0.6	0.7
11 IR - T - A55	●	○	11 IL - T - A55			48 - 16	11	0.8	0.9
16 IR - T - A55	●	●	16 IL - T - A55	●		48 - 16	16	0.8	0.9
16 IR - T - G55	●	●	16 IL - T - G55	●		14 - 8	16	1.2	1.7
16 IR - T - AG55	●	●	16 IL - T - AG55	●		48 - 8	16	1.2	1.7
22 IR - T - N55	●		22 IL - T - N55			7 - 5	22	1.7	2.5
27 IR - T - Q55	●		27 IL - T - Q55			4.5 - 4	27	2.0	2.9



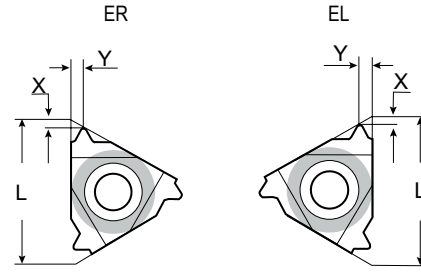
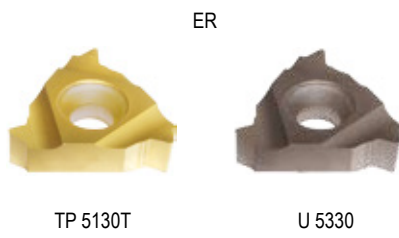
External Thread ISO 60°

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - ISO 0.35			11 EL - V - ISO 0.35			0.35	11	0.8	0.4
11 ER - V - ISO 0.4			11 EL - V - ISO 0.4			0.4		0.7	0.4
11 ER - V - ISO 0.45			11 EL - V - ISO 0.45			0.45		0.7	0.4
11 ER - V - ISO 0.5	o		11 EL - V - ISO 0.5			0.5		0.6	0.6
11 ER - V - ISO 0.6	o		11 EL - V - ISO 0.6			0.6		0.6	0.6
11 ER - V - ISO 0.7	o		11 EL - V - ISO 0.7			0.7		0.6	0.6
11 ER - V - ISO 0.75	o		11 EL - V - ISO 0.75			0.75		0.6	0.6
11 ER - V - ISO 0.8	o		11 EL - V - ISO 0.8			0.8		0.6	0.6
11 ER - V - ISO 1.0	•		11 EL - V - ISO 1.0			1.0		0.7	0.7
11 ER - V - ISO 1.25	o		11 EL - V - ISO 1.25			1.25		0.8	0.9
11 ER - V - ISO 1.5	•		11 EL - V - ISO 1.5			1.5		0.8	1.0
11 ER - V - ISO 1.75	o		11 EL - V - ISO 1.75			1.75		0.8	1.1
16 ER - V - ISO 0.35			16 EL - V - ISO 0.35			0.35	16	0.8	0.4
16 ER - V - ISO 0.4			16 EL - V - ISO 0.4			0.4		0.7	0.4
16 ER - V - ISO 0.45			16 EL - V - ISO 0.45			0.45		0.7	0.4
16 ER - V - ISO 0.5	•	•	16 EL - V - ISO 0.5	•		0.5		0.6	0.6
16 ER - V - ISO 0.6	o		16 EL - V - ISO 0.6			0.6		0.6	0.6
16 ER - V - ISO 0.7	•	•	16 EL - V - ISO 0.7			0.7		0.6	0.6
16 ER - V - ISO 0.75	•	•	16 EL - V - ISO 0.75	•		0.75		0.6	0.6
16 ER - V - ISO 0.8	•	•	16 EL - V - ISO 0.8			0.8		0.6	0.6
16 ER - V - ISO 1.0	•	•	16 EL - V - ISO 1.0	•		1.0		0.7	0.7
16 ER - V - ISO 1.25	•	•	16 EL - V - ISO 1.25	•		1.25		0.8	0.9
16 ER - V - ISO 1.5	•	•	16 EL - V - ISO 1.5	•		1.5		0.8	1.0
16 ER - V - ISO 1.75	•	•	16 EL - V - ISO 1.75	•		1.75		0.9	1.2
16 ER - V - ISO 2.0	•	•	16 EL - V - ISO 2.0	•		2.0		1.0	1.3
16 ER - V - ISO 2.5	•	•	16 EL - V - ISO 2.5	•		2.5		1.1	1.5
16 ER - V - ISO 3.0	•	•	16 EL - V - ISO 3.0	•		3.0		1.2	1.6
16 ER - V - ISO 3.5	•		16 EL - V - ISO 3.5			3.5		1.2	1.7
22 ER - V - ISO 3.5	•	•	22 EL - V - ISO 3.5			3.5	22	1.6	2.3
22 ER - V - ISO 4.0	•	•	22 EL - V - ISO 4.0			4.0		1.6	2.3
22 ER - V - ISO 4.5	•	•	22 EL - V - ISO 4.5			4.5		1.7	2.4
22 ER - V - ISO 5.0	•	•	22 EL - V - ISO 5.0			5.0		1.7	2.5
22 ER - V - ISO 5.5	•	•	22 EL - V - ISO 5.5			5.5		1.7	2.6
22 ER - V - ISO 6.0	•	•	22 EL - V - ISO 6.0			6.0		1.9	2.7
27 ER - V - ISO 5.5	•		27 EL - V - ISO 5.5			5.5	27	1.9	2.7
27 ER - V - ISO 6.0	•		27 EL - V - ISO 6.0			6.0		2.0	2.9



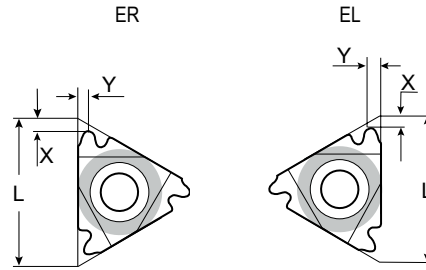
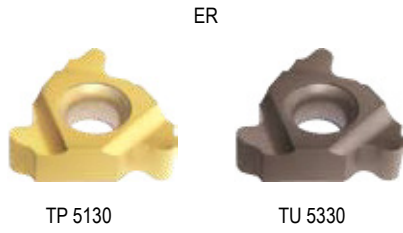
External Thread BSW 60°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - BSW 40			11 EL - V - BSW 40			40	11	0.6	0.6
11 ER - V - BSW 36			11 EL - V - BSW 36			36		0.6	0.6
11 ER - V - BSW 32	o		11 EL - V - BSW 32			32		0.6	0.6
11 ER - V - BSW 28	o		11 EL - V - BSW 28			28		0.6	0.7
11 ER - V - BSW 26	o		11 EL - V - BSW 26			26		0.7	0.8
11 ER - V - BSW 24	o		11 EL - V - BSW 24			24		0.7	0.8
11 ER - V - BSW 22	o		11 EL - V - BSW 22			22		0.8	0.9
11 ER - V - BSW 20	o		11 EL - V - BSW 20			20		0.8	0.9
11 ER - V - BSW 19	o		11 EL - V - BSW 19			19		0.8	1.0
11 ER - V - BSW 18	o		11 EL - V - BSW 18			18		0.8	1.0
11 ER - V - BSW 16	o		11 EL - V - BSW 16			16		0.9	1.1
11 ER - V - BSW 14	o		11 EL - V - BSW 14			14		1.0	1.2
16 ER - V - BSW 40			16 EL - V - BSW 40			40	16	0.6	0.6
16 ER - V - BSW 36			16 EL - V - BSW 36			36		0.6	0.6
16 ER - V - BSW 32	o		16 EL - V - BSW 32			32		0.6	0.6
16 ER - V - BSW 28	•		16 EL - V - BSW 28			28		0.6	0.7
16 ER - V - BSW 26	•		16 EL - V - BSW 26			26		0.7	0.8
16 ER - V - BSW 24	•		16 EL - V - BSW 24			24		0.7	0.8
16 ER - V - BSW 22	o		16 EL - V - BSW 22			22		0.8	0.9
16 ER - V - BSW 20	o		16 EL - V - BSW 20			20		0.8	0.9
16 ER - V - BSW 19	•	•	16 EL - V - BSW 19	•		19		0.8	1.0
16 ER - V - BSW 18	•		16 EL - V - BSW 18			18		0.8	1.0
16 ER - V - BSW 16	•		16 EL - V - BSW 16			16		0.9	1.1
16 ER - V - BSW 14	•	•	16 EL - V - BSW 14	•		14		1.0	1.2
16 ER - V - BSW 12	•		16 EL - V - BSW 12			12		1.1	1.4
16 ER - V - BSW 11	•	•	16 EL - V - BSW 11	•		11		1.1	1.5
16 ER - V - BSW 10	•	o	16 EL - V - BSW 10			10		1.1	1.5
16 ER - V - BSW 9	•		16 EL - V - BSW 9			9		1.2	1.7
16 ER - V - BSW 8	•		16 EL - V - BSW 8			8		1.2	1.5
22 ER - V - BSW 7	o	•	22 EL - V - BSW 7			7	22	1.6	2.3
22 ER - V - BSW 6	•	•	22 EL - V - BSW 6			6		1.6	2.3
22 ER - V - BSW 5	o	•	22 EL - V - BSW 5			5		1.7	2.4
27 ER - V - BSW 4.5	o	•	27 EL - V - BSW 4.5			4.5	27	1.8	2.6
27 ER - V - BSW 4	o	•	27 EL - V - BSW 4			4		2.0	2.9



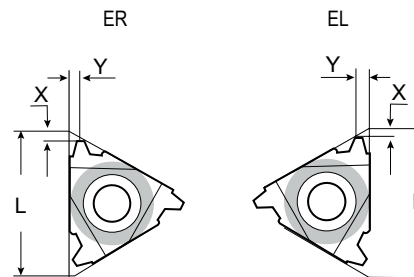
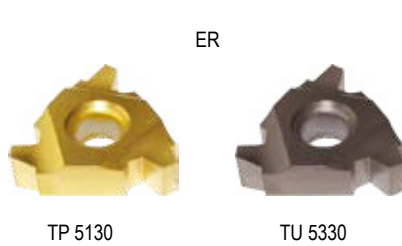
External Thread UN 60°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - UN 40			11 EL - V - UN 40			40	11	0.6	0.6
11 ER - V - UN 36			11 EL - V - UN 36			36		0.6	0.6
11 ER - V - UN 32	o		11 EL - V - UN 32			32		0.6	0.6
11 ER - V - UN 28	o		11 EL - V - UN 28			28		0.6	0.7
11 ER - V - UN 27	o		11 EL - V - UN 27			27		0.7	0.8
11 ER - V - UN 24	•		11 EL - V - UN 24			24		0.7	0.8
11 ER - V - UN 20	o		11 EL - V - UN 20			20		0.8	0.9
11 ER - V - UN 18	o		11 EL - V - UN 18			18		0.8	1.0
11 ER - V - UN 16	o		11 EL - V - UN 16			16		0.9	1.1
11 ER - V - UN 14	o		11 EL - V - UN 14			14		0.9	1.1
16 ER - V - UN 40	o		16 EL - V - UN 40			40	16	0.6	0.6
16 ER - V - UN 36	o		16 EL - V - UN 36			36		0.6	0.6
16 ER - V - UN 32	•	o	16 EL - V - UN 32			32		0.6	0.6
16 ER - V - UN 28	•		16 EL - V - UN 28			28		0.6	0.7
16 ER - V - UN 27	o		16 EL - V - UN 27			26		0.7	0.8
16 ER - V - UN 24	•		16 EL - V - UN 24			24		0.7	0.8
16 ER - V - UN 20	•		16 EL - V - UN 20			20		0.8	0.9
16 ER - V - UN 18	•		16 EL - V - UN 18			18		0.8	1.0
16 ER - V - UN 16	•		16 EL - V - UN 16			16		0.9	1.1
16 ER - V - UN 14	•		16 EL - V - UN 14			14		1.0	1.2
16 ER - V - UN 13	•		16 EL - V - UN 13			13		1.0	1.3
16 ER - V - UN 12	•		16 EL - V - UN 12			12		1.1	1.4
16 ER - V - UN 11	•		16 EL - V - UN 11			11		1.1	1.5
16 ER - V - UN 10	•		16 EL - V - UN 10			10		1.1	1.5
16 ER - V - UN 9	•		16 EL - V - UN 9			9		1.2	1.7
16 ER - V - UN 8	o		16 EL - V - UN 8			8		1.2	1.6
22 ER - V - UN 7	o		22 EL - V - UN 7			7	22	1.6	2.3
22 ER - V - UN 6	•		22 EL - V - UN 6			6		1.6	2.3
22 ER - V - UN 5	o		22 EL - V - UN 5			5		1.7	2.5
27 ER - V - UN 4.5	o		27 EL - V - UN 4.5			4.5	27	1.9	2.7
27 ER - V - UN 4	o		27 EL - V - UN 4			4		2.1	3.0



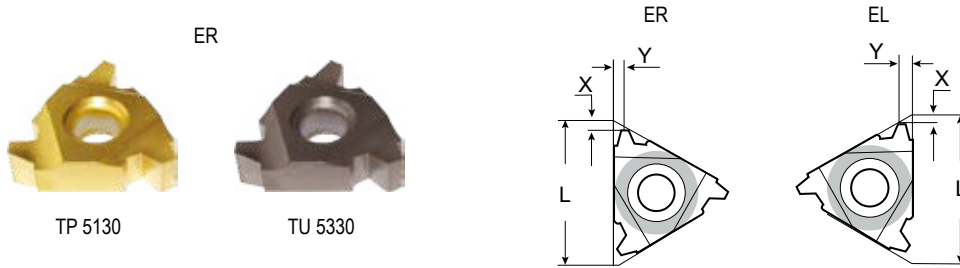
External Thread RD DIN 405

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
16 ER - V - RD 405/10	•		16 EL - V - RD 405/10			10	16	1.1	1.2
16 ER - V - RD 405/8	•		16 EL - V - RD 405/8			8		1.4	1.3
16 ER - V - RD 405/6	•		16 EL - V - RD 405/6			6		1.5	1.7
22 ER - V - RD 405/6	•		22 EL - V - RD 405/6			6	22	1.5	1.7
22 ER - V - RD 405/4	•		22 EL - V - RD 405/4			4		2.2	2.3
27 ER - V - RD 405/4	○		27 EL - V - RD 405/4			4	27	2.3	2.3



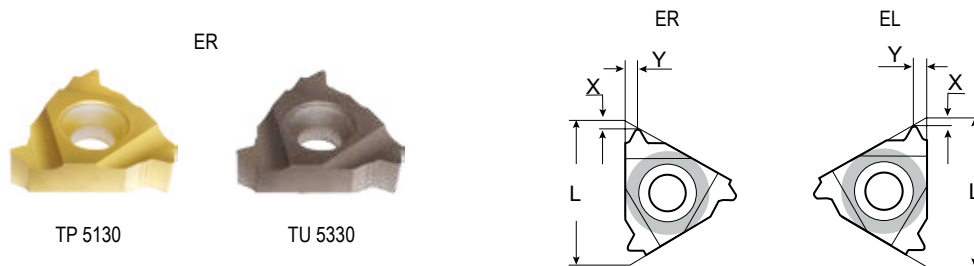
External Thread TR DIN 103

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - TR 103/1.5			11 EL - V - TR 103/1.5			1.5	11	0.8	0.9
16 ER - V - TR 103/1.5	○		16 EL - V - TR 103/1.5			1.5	16	1.0	1.1
16 ER - V - TR 103/2	•		16 EL - V - TR 103/2			2		1.0	1.3
16 ER - V - TR 103/3	•		16 EL - V - TR 103/3			3		1.3	1.5
22 ER - V - TR 103/4	•		22 EL - V - TR 103/4			4	22	1.7	1.9
22 ER - V - TR 103/5	•		22 EL - V - TR 103/5			5		2.1	2.5
27 ER - V - TR 103/6	•		27 EL - V - TR 103/6			6	27	2.3	2.7



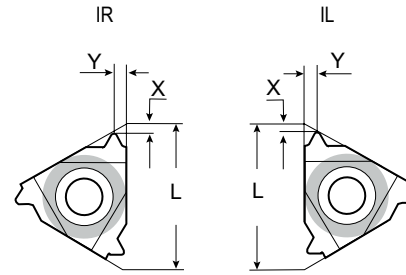
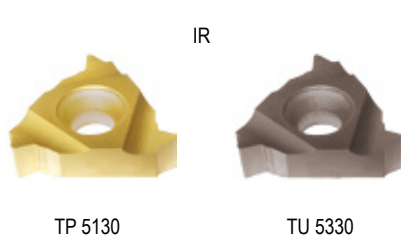
External Thread ACME

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - ACME 16	o		11 EL - V - ACME 16			16	11	0.9	1.0
16 ER - V - ACME 16	o		16 EL - V - ACME 16			16	16	1.0	1.1
16 ER - V - ACME 14	o		16 EL - V - ACME 14			14		1.0	1.2
16 ER - V - ACME 12	o		16 EL - V - ACME 12			12		1.1	1.2
16 ER - V - ACME 10	•		16 EL - V - ACME 10			10		1.3	1.3
16 ER - V - ACME 8	o		16 EL - V - ACME 8			8		1.5	1.5
22 ER - V - ACME 6	•		22 EL - V - ACME 6			6	22	1.8	2.1
22 ER - V - ACME 5	•		22 EL - V - ACME 5			5		2.0	2.3
27 ER - V - ACME 4	o		27 EL - V - ACME 4			4	27	2.7	2.7



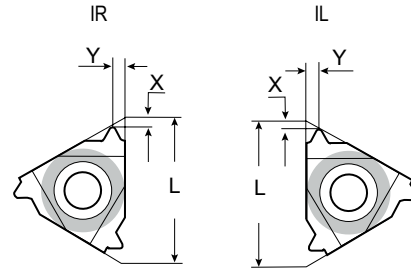
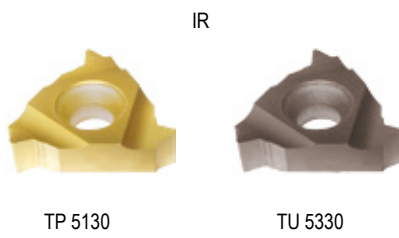
External Thread NPT 60°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - NPT 27	o		11 EL - V - NPT 27			27	11	0.7	0.8
11 ER - V - NPT 18	o		11 EL - V - NPT 18			18		0.8	1.0
11 ER - V - NPT 14	o		11 EL - V - NPT 14			14		0.8	1.0
16 ER - V - NPT 27	o		16 EL - V - NPT 27			27	16	0.7	0.8
16 ER - V - NPT 18	•		16 EL - V - NPT 18			18		0.8	1.0
16 ER - V - NPT 14	•		16 EL - V - NPT 14			14		0.9	1.2
16 ER - V - NPT 11.5	•		16 EL - V - NPT 11.5			11.5		1.1	1.5
16 ER - V - NPT 8	•		16 EL - V - NPT 8			8		1.3	1.8



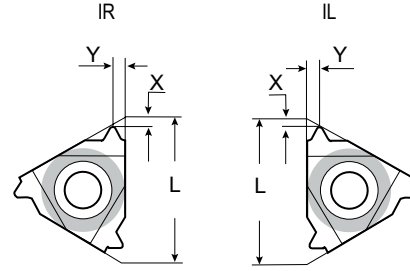
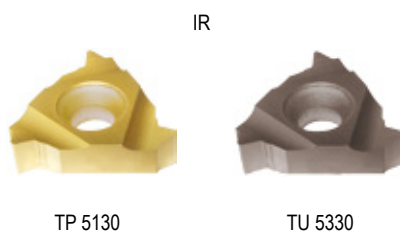
Internal Thread ISO 60°

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
06 IR - V - ISO 0.5	o		06 IL - V - ISO 0.5			0.5	6	0.9	0.5
06 IR - V - ISO 0.75	o		06 IL - V - ISO 0.75			0.75		0.8	0.5
06 IR - V - ISO 1.0	o		06 IL - V - ISO 1.0			1.0		0.7	0.6
06 IR - V - ISO 1.25	o		06 IL - V - ISO 1.25			1.25		0.6	0.6
06 IR - V - ISO 1.5	o		06 IL - V - ISO 1.5			1.5		0.5	0.6
08 IR - V - ISO 0.5	o		08 IL - V - ISO 0.5			0.5	8	0.6	0.5
08 IR - V - ISO 0.75	•		08 IL - V - ISO 0.75			0.75		0.6	0.5
08 IR - V - ISO 1.0	•		08 IL - V - ISO 1.0			1.0		0.6	0.6
08 IR - V - ISO 1.25	o		08 IL - V - ISO 1.25			1.25		0.6	0.7
08 IR - V - ISO 1.5	o		08 IL - V - ISO 1.5			1.5		0.6	0.7
08 IR - V - ISO 1.75	o		08 IL - V - ISO 1.75			1.75		0.6	0.8
11 IR - V - ISO 0.35			11 IL - V - ISO 0.35			0.35	11	0.8	0.3
11 IR - V - ISO 0.4			11 IL - V - ISO 0.4			0.4		0.8	0.4
11 IR - V - ISO 0.45			11 IL - V - ISO 0.45			0.45		0.8	0.4
11 IR - V - ISO 0.5	o		11 IL - V - ISO 0.5			0.5		0.6	0.6
11 IR - V - ISO 0.6	o		11 IL - V - ISO 0.6			0.6		0.6	0.6
11 IR - V - ISO 0.7	o		11 IL - V - ISO 0.7			0.7		0.6	0.6
11 IR - V - ISO 0.75	•		11 IL - V - ISO 0.75			0.75		0.6	0.6
11 IR - V - ISO 0.8	o		11 IL - V - ISO 0.8			0.8		0.6	0.6
11 IR - V - ISO 1.0	•		11 IL - V - ISO 1.0			1.0		0.6	0.7
11 IR - V - ISO 1.25	•		11 IL - V - ISO 1.25			1.25		0.8	0.9
11 IR - V - ISO 1.5	•	•	11 IL - V - ISO 1.5			1.5		0.8	1.0
11 IR - V - ISO 1.75	•		11 IL - V - ISO 1.75			1.75		0.9	1.1
11 IR - V - ISO 2.0	•	o	11 IL - V - ISO 2.0			2.0		0.8	0.9
11 IR - V - ISO 2.5	•		11 IL - V - ISO 2.5			2.5		0.8	1.2



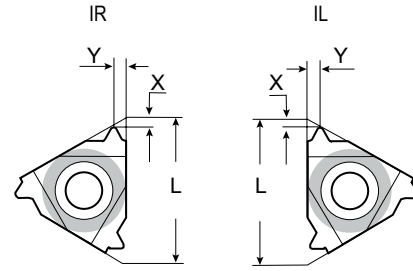
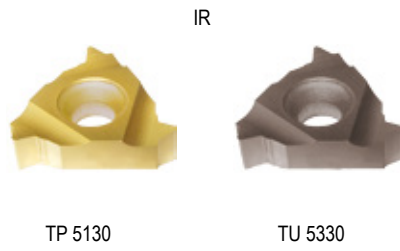
Internal Thread ISO 60°

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
16 IR - V - ISO 0.35			16 IL - V - ISO 0.35			0.35	16	0.8	0.3
16 IR - V - ISO 0.4			16 IL - V - ISO 0.4			0.4		0.8	0.4
16 IR - V - ISO 0.45			16 IL - V - ISO 0.45			0.45		0.8	0.4
16 IR - V - ISO 0.5	•	•	16 IL - V - ISO 0.5	o		0.5		0.6	0.6
16 IR - V - ISO 0.6	o		16 IL - V - ISO 0.6			0.6		0.6	0.6
16 IR - V - ISO 0.7	•	•	16 IL - V - ISO 0.7			0.7		0.6	0.6
16 IR - V - ISO 0.75	•	•	16 IL - V - ISO 0.75	o		0.75		0.6	0.6
16 IR - V - ISO 0.8	•	•	16 IL - V - ISO 0.8			0.8		0.6	0.6
16 IR - V - ISO 1.0	•	•	16 IL - V - ISO 1.0	•		1.0		0.6	0.7
16 IR - V - ISO 1.25	•	•	16 IL - V - ISO 1.25	•		1.25		0.8	0.9
16 IR - V - ISO 1.5	•	•	16 IL - V - ISO 1.5	•		1.5		0.8	1.0
16 IR - V - ISO 1.75	•	•	16 IL - V - ISO 1.75	•		1.75		0.9	1.2
16 IR - V - ISO 2.0	•	•	16 IL - V - ISO 2.0	•		2.0		1.0	1.3
16 IR - V - ISO 2.5	•	•	16 IL - V - ISO 2.5	•		2.5		1.1	1.5
16 IR - V - ISO 3.0	•	•	16 IL - V - ISO 3.0	•		3.0		1.1	1.5
16 IR - V - ISO 3.5	•		16 IL - V - ISO 3.5			3.5		1.2	1.7
22 IR - V - ISO 3.5	•	•	22 IL - V - ISO 3.5			3.5	22	1.6	2.3
22 IR - V - ISO 4.0	•	•	22 IL - V - ISO 4.0			4.0		1.6	2.3
22 IR - V - ISO 4.5	•	•	22 IL - V - ISO 4.5			4.5		1.6	2.4
22 IR - V - ISO 5.0	•	•	22 IL - V - ISO 5.0			5.0		1.6	2.3
22 IR - V - ISO 5.5	•	•	22 IL - V - ISO 5.5			5.5		1.6	2.3
22 IR - V - ISO 6.0	•	•	22 IL - V - ISO 6.0			6.0		1.6	2.4
27 IR - V - ISO 5.5	•		27 IL - V - ISO 5.5			5.5	27	1.6	2.3
27 IR - V - ISO 6.0	•		27 IL - V - ISO 6.0			6.0		1.8	2.5



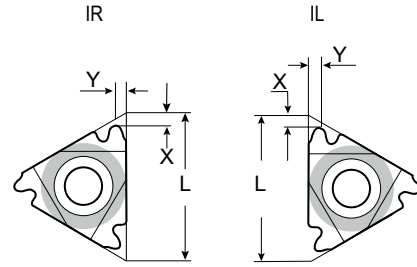
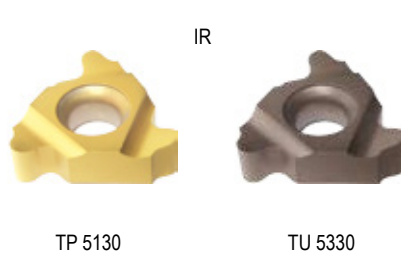
Internal Thread BSW 55°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 IR - V - BSW 40			11 IL - V - BSW 40			40	11	0.6	0.6
11 IR - V - BSW 36			11 IL - V - BSW 36			36		0.6	0.6
11 IR - V - BSW 32			11 IL - V - BSW 32			32		0.6	0.6
11 IR - V - BSW 28	o		11 IL - V - BSW 28			28		0.6	0.7
11 IR - V - BSW 26	o		11 IL - V - BSW 26			26		0.7	0.7
11 IR - V - BSW 24	o		11 IL - V - BSW 24			24		0.7	0.8
11 IR - V - BSW 22	o		11 IL - V - BSW 22			22		0.8	0.9
11 IR - V - BSW 20	o		11 IL - V - BSW 20			20		0.8	0.9
11 IR - V - BSW 19	•	o	11 IL - V - BSW 19	•		19		0.8	1.0
11 IR - V - BSW 18	o	o	11 IL - V - BSW 18			18		0.8	1.0
11 IR - V - BSW 16	o		11 IL - V - BSW 16			16		0.9	1.1
11 IR - V - BSW 14	•	o	11 IL - V - BSW 14	•		14		0.9	1.1
16 IR - V - BSW 40			16 IL - V - BSW 40			40	16	0.6	0.6
16 IR - V - BSW 36			16 IL - V - BSW 36			36		0.6	0.6
16 IR - V - BSW 32			16 IL - V - BSW 32			32		0.6	0.6
16 IR - V - BSW 28	o		16 IL - V - BSW 28			28		0.6	0.7
16 IR - V - BSW 26	•		16 IL - V - BSW 26			26		0.7	0.8
16 IR - V - BSW 24	o		16 IL - V - BSW 24			24		0.7	0.8
16 IR - V - BSW 22	o		16 IL - V - BSW 22			22		0.8	0.9
16 IR - V - BSW 20	•		16 IL - V - BSW 20			20		0.8	0.9
16 IR - V - BSW 19	•	•	16 IL - V - BSW 19	•		19		0.8	1.0
16 IR - V - BSW 18	•		16 IL - V - BSW 18			18		0.8	1.0
16 IR - V - BSW 16	•		16 IL - V - BSW 16			16		0.9	1.1
16 IR - V - BSW 14	•	•	16 IL - V - BSW 14	•		14		1.0	1.2
16 IR - V - BSW 12	•	o	16 IL - V - BSW 12			12		1.1	1.4
16 IR - V - BSW 11	•	•	16 IL - V - BSW 11	•		11		1.1	1.5
16 IR - V - BSW 10	•		16 IL - V - BSW 10			10		1.1	1.5
16 IR - V - BSW 9	•	•	16 IL - V - BSW 9	•		9		1.2	1.7
16 IR - V - BSW 8	•		16 IL - V - BSW 8			8		1.2	1.5
22 IR - V - BSW 7	o		22 IL - V - BSW 7			7	22	1.6	2.3
22 IR - V - BSW 6	o		22 IL - V - BSW 6			6		1.6	2.3
22 IR - V - BSW 5	o		22 IL - V - BSW 5			5		1.7	2.4
27 IR - V - BSW 4.5	•		27 IL - V - BSW 4.5			4.5	27	1.8	2.6
27 IR - V - BSW 4	•		27 IL - V - BSW 4			4		2.0	2.9



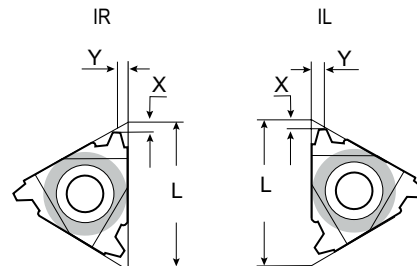
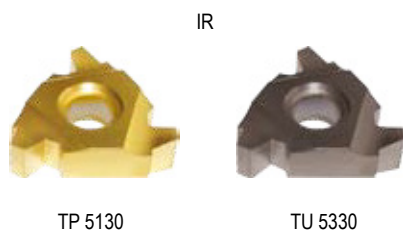
Internal Thread UN 60°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - UN 40			11 EL - V - UN 40			40	11	0.6	0.6
11 ER - V - UN 36			11 EL - V - UN 36			36		0.6	0.6
11 ER - V - UN 32	o		11 EL - V - UN 32			32		0.6	0.6
11 ER - V - UN 28	o		11 EL - V - UN 28			28		0.6	0.7
11 ER - V - UN 27	o		11 EL - V - UN 27			27		0.7	0.8
11 ER - V - UN 24	o		11 EL - V - UN 24			24		0.7	0.8
11 ER - V - UN 20	o		11 EL - V - UN 20			20		0.8	0.9
11 ER - V - UN 18	•		11 EL - V - UN 18			18		0.8	1.0
11 ER - V - UN 16	•		11 EL - V - UN 16			16		0.9	1.1
11 ER - V - UN 14	•		11 EL - V - UN 14			14		0.9	1.1
16 ER - V - UN 40			16 EL - V - UN 40			40	16	0.6	0.6
16 ER - V - UN 36			16 EL - V - UN 36			36		0.6	0.6
16 ER - V - UN 32	o		16 EL - V - UN 32			32		0.6	0.6
16 ER - V - UN 28	•		16 EL - V - UN 28			28		0.6	0.7
16 ER - V - UN 27	o		16 EL - V - UN 27			26		0.7	0.8
16 ER - V - UN 24	•		16 EL - V - UN 24			24		0.7	0.8
16 ER - V - UN 20	•		16 EL - V - UN 20			20		0.8	0.9
16 ER - V - UN 18	•		16 EL - V - UN 18			18		0.8	1.0
16 ER - V - UN 16	•		16 EL - V - UN 16			16		0.9	1.1
16 ER - V - UN 14	•		16 EL - V - UN 14			14		0.9	1.2
16 ER - V - UN 13	o		16 EL - V - UN 13			13		1.0	1.3
16 ER - V - UN 12	•		16 EL - V - UN 12			12		1.1	1.4
16 ER - V - UN 11	•		16 EL - V - UN 11			11		1.1	1.5
16 ER - V - UN 10	o		16 EL - V - UN 10			10		1.1	1.5
16 ER - V - UN 9	•		16 EL - V - UN 9			9		1.2	1.7
16 ER - V - UN 8	•		16 EL - V - UN 8			8		1.1	1.5
22 ER - V - UN 7	o		22 EL - V - UN 7			7	22	1.6	2.3
22 ER - V - UN 6	o		22 EL - V - UN 6			6		1.6	2.3
22 ER - V - UN 5	o		22 EL - V - UN 5			5		1.6	2.3
27 ER - V - UN 4.5	o		27 EL - V - UN 4.5			4.5	27	1.7	2.4
27 ER - V - UN 4	o		27 EL - V - UN 4			4		1.8	2.7



Internal Thread RD DIN 405

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
16 IR - V - RD 405/10	•		16 IL - V - RD 405/10			10	16	1.1	1.2
16 IR - V - RD 405/8	○		16 IL - V - RD 405/8			8		1.4	1.4
16 IR - V - RD 405/6	•		16 IL - V - RD 405/6			6		1.4	1.5
22 IR - V - RD 405/6	•		22 IL - V - RD 405/6			6	22	1.5	1.7
22 IR - V - RD 405/4	•		22 IL - V - RD 405/4			4		2.2	2.3
27 IR - V - RD 405/4	•		27 IL - V - RD 405/4			4	27	2.2	2.3



Internal Thread TR DIN 103

Part Number	Stock		Part Number	Stock		Pitch mm	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - TR 103/1.5			11 EL - V - TR 103/1.5			1.5	11	0.8	0.9
16 ER - V - TR 103/1.5	○		16 EL - V - TR 103/1.5			1.5	16	1.0	1.1
16 ER - V - TR 103/2	•		16 EL - V - TR 103/2			2		1.0	1.3
16 ER - V - TR 103/3	•		16 EL - V - TR 103/3			3		1.3	1.5
22 ER - V - TR 103/4	•		22 EL - V - TR 103/4			4	22	1.7	1.9
22 ER - V - TR 103/5	•		22 EL - V - TR 103/5	○		5		2.1	2.5
27 ER - V - TR 103/6	•		27 EL - V - TR 103/6			6	27	2.3	2.7



Internal Thread ACME

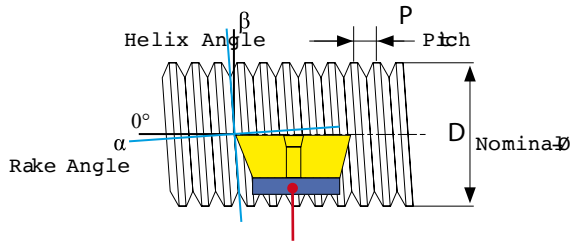
Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - ACME 16	o		11 EL - V - ACME 16			16	11	0.9	1.0
16 ER - V - ACME 16	o		16 EL - V - ACME 16			16	16	0.9	1.0
16 ER - V - ACME 14	o		16 EL - V - ACME 14			14		1.0	1.2
16 ER - V - ACME 12	o		16 EL - V - ACME 12			12		1.1	1.2
16 ER - V - ACME 10	•		16 EL - V - ACME 10			10		1.3	1.3
16 ER - V - ACME 8	o		16 EL - V - ACME 8			8		1.5	1.5
22 ER - V - ACME 6	o		22 EL - V - ACME 6			6	22	1.8	2.1
22 ER - V - ACME 5	•		22 EL - V - ACME 5			5		2.0	2.3
27 ER - V - ACME 4	o		27 EL - V - ACME 4			4	27	2.3	2.6



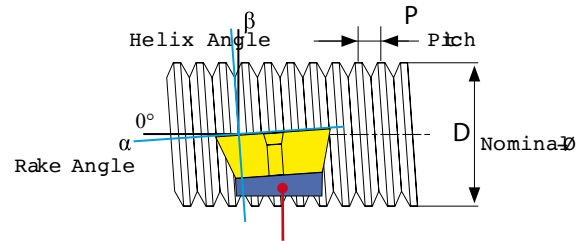
Internal Thread NPT 60°

Part Number	Stock		Part Number	Stock		Pitch TPI	L mm	X mm	Y mm
RH Inserts	TP 5130	TU 5330	LH Inserts	TP 5130	TU 5330				
11 ER - V - NPT 27	o		11 EL - V - NPT 27			27	11	0.7	0.8
11 ER - V - NPT 18	o		11 EL - V - NPT 18			18		0.8	1.0
11 ER - V - NPT 14	o		11 EL - V - NPT 14			14		0.8	1.0
16 ER - V - NPT 27	o		16 EL - V - NPT 27			27	16	0.7	0.8
16 ER - V - NPT 18	•		16 EL - V - NPT 18			18		0.8	1.0
16 ER - V - NPT 14	•		16 EL - V - NPT 14			14		0.9	1.2
16 ER - V - NPT 11.5	•		16 EL - V - NPT 11.5			11.5		1.1	1.5
16 ER - V - NPT 8	•		16 EL - V - NPT 8			8		1.3	1.8

In favor of high level on accuracy of the profile, best surface finish as well as simultaneously wear and longer tool life of the insert, the rake angle "α" of the insert and the helix angle "β" of the thread have to agree.



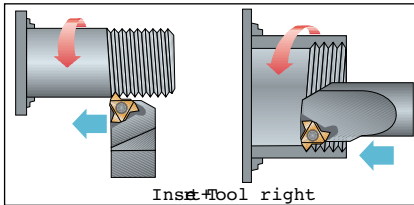
Shim with incorrect rake angle



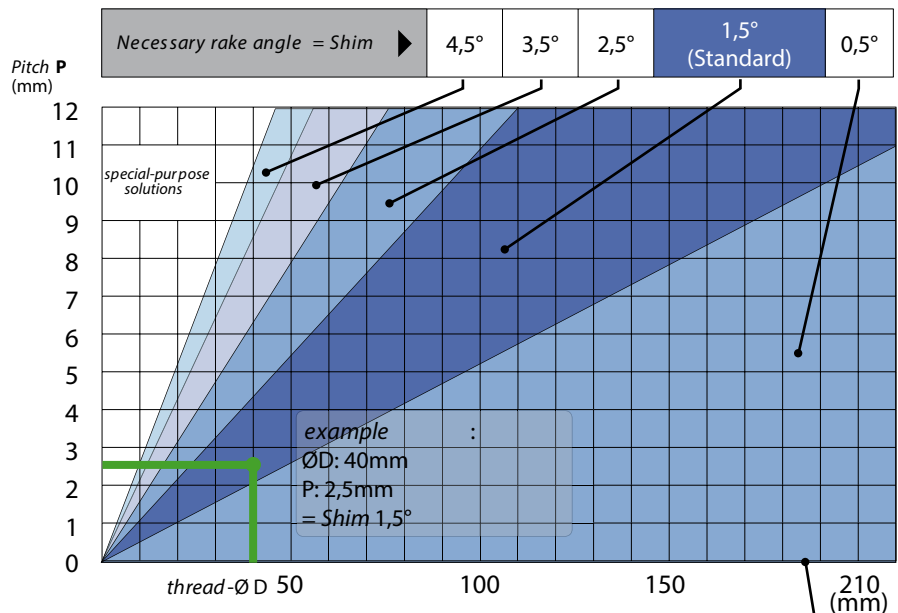
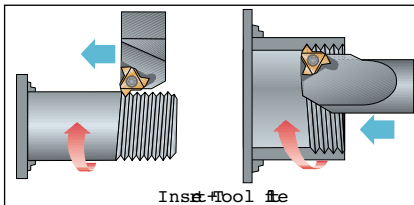
Shim with correct rake angle

Movement to Chuck

Right Thread:

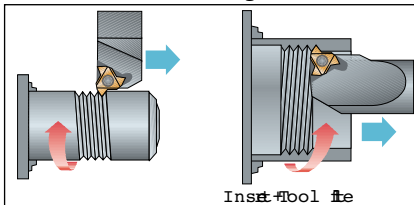


Left Thread:

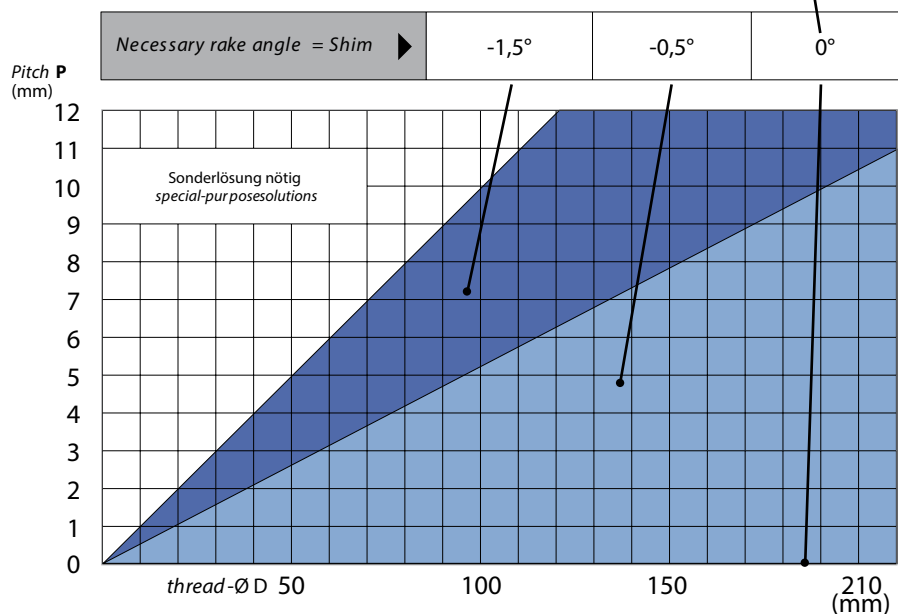
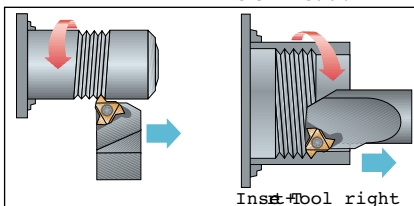


Movement to Center

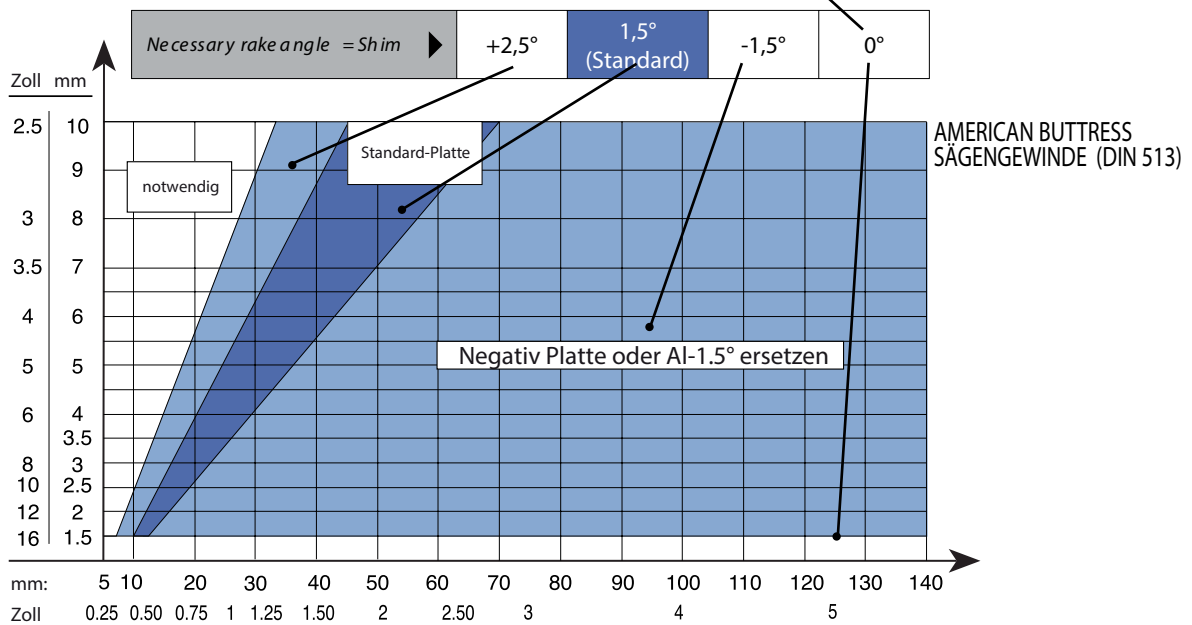
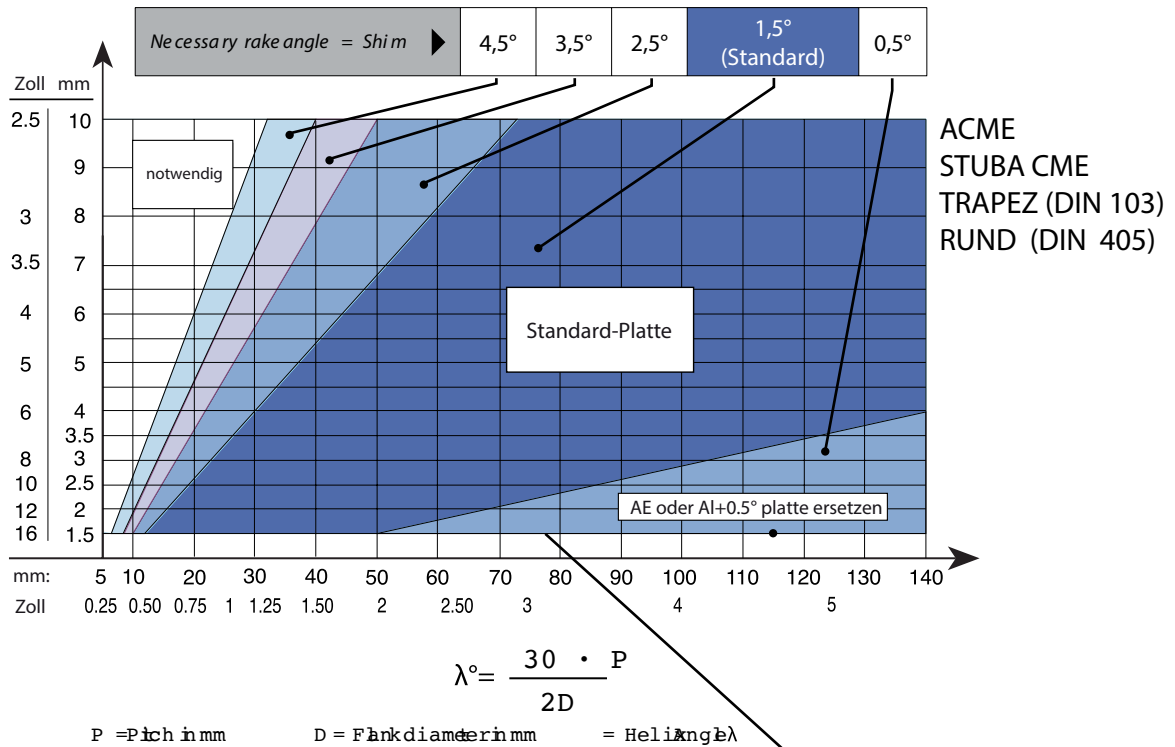
Right Thread:



Left Thread:



$$\lambda^\circ = \frac{20 \cdot P}{D} \quad \text{tg } \lambda = \frac{P}{3,14 \cdot D}$$



Guide Lines for the Number of Threading Passes

Pitch	mm	0.5	0.75	1.0	1.25	1.5	1.75	2.0	2.5	3.0	4.0	5.0	6.0
	G/1" TPI	48	32	24	20	16	14	12	10	8	6	5	4
No. of passes		4 - 6	4 - 7	4 - 8	5 - 9	6 - 10	7 - 12	7 - 12	8 - 14	10 - 16	11 - 18	12 - 20	12 - 20



Full Profile - Threading Insert

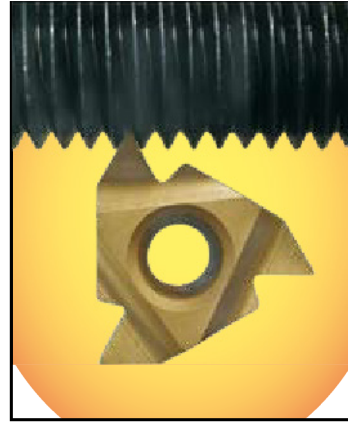
Advantages

The complete thread profile including tip of thread is machined complying with the norm - suitable for series production.

The tips of the thread are burr-free.

Disadvantages

For every pitch a different insert is required.



Partial Profile - Threading Insert

Advantages

With only a few inserts it is possible to machine most of the different pitches.

Disadvantages

The profile of thread differs slightly from the norm.

The tips of the thread often have to be de-burred.

Cutting Data Recommendations for Threading

Material	Tensile Strength	Cutting Speeds v_c [m/min]	
		TP 5130 (P/M30/K20C)	TU 5330 (P30C)
A (P)	Mild Steel	< 650 N/mm ²	70 - 200
		650 - 850 N/mm ²	70 - 160
	Alloyed Steel	700 - 1000 N/mm ²	90 - 180
		1000 - 1300 N/mm ²	70 - 120
R (M)	Stainless Steel	500 - 700 N/mm ² (austenitic)	50 - 240
		500 - 900 N/mm ² (ferritic)	50 - 200
F (K)	Grey Cast Iron	110 - 150 HB	60 - 230
		> 150 HB	60 - 160
N	Aluminium and Copper Alloys	50 - 160 HB	100 - 500

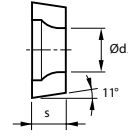
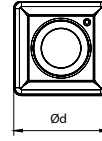
M	ISO Metric Coarse Thread DIN 13	Typ Type N	For universal use
SL 	Blind Hole	vapor.	Steam treatment
DL 	Through Hole		

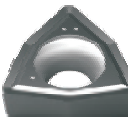
Cutting Data Recommendations (when using emulsion / cutting oil)

Material		Tensile Strength	Cutting Speeds v_c [m/min]
			TP 5130 (P/M30/K20C)
A	Mild Steel	< 650 N/mm ²	08 - 12
			10 - 15
		650 - 850 N/mm ²	08 - 10
			10 - 12
	Alloyed Steel	700 - 1000 N/mm ²	06 - 08
			08 - 10
		1000 - 1300 N/mm ²	
R	Stainless Steel	500 - 700 N/mm ² (austenitic)	05 - 06
			06 - 08
		500 - 900 N/mm ² (ferritic)	05 - 06
			06 - 08
F	Grey Cast Iron	110 - 150 HB	10 - 12
			12 - 15
		> 150 HB	08 - 10
			10 - 12
N	Aluminium		12 - 15
			15 - 18
	Copper Alloys		08 - 12
			08 - 15



90°



Insert	Part Number	DP 3000 P30C	DP 2235 P35C	DM 5125 M30C	DP 5330 P35C	Dimensions [mm]		
		Stainless Steel		Universal	Steel	Ø d	s	Ø d ₁
		Stock		Stock				
 SPMX	05 02 04 - M20				o	5.56	2.38	2.50
	06 02 04 - M20				o	6.35	2.38	2.80
	07 T3 08 - M20				o	7.94	3.97	2.80
	09 04 08 - M20				o	9.80	4.30	4.10
	11 04 08 - M20				o	11.50	4.76	4.40
	14 05 12 - M20				o	14.30	5.65	5.50
 SPMG	05 02 04 - S20	•				5.00	2.38	2.20
	06 02 04 - S20	•				6.00	2.38	2.55
	07 T3 08 - S20	•				7.94	3.97	2.85
	09 04 08 - S20	•				9.80	4.30	4.10
	11 04 08 - S20	•				11.50	4.80	4.40
	14 05 12 - S20	•				14.30	5.20	5.75
 SPGT	05 02 04			o		5.00	2.38	2.20
	06 02 04			o		6.00	2.38	2.60
	07 T3 08			o		7.94	3.97	2.80
	09 04 08			o		9.80	4.30	4.20
	11 04 08			o		11.50	4.76	4.40
	14 05 12			o		14.30	5.20	5.75
 WCMX	03 02 08 C - 20		•			5.56	2.38	2.50
	04 02 08 C - 20		•			6.35	2.38	2.80
	05 03 08 C - 20		•			7.94	3.18	3.40
	06 T3 08 C - 20		•			9.525	3.97	4.40
	08 04 08 C - 20		•			12.7	4.76	5.50
	08 04 12 C - 20		•			12.7	4.76	5.50

CUTTING DATA RECOMMENDATIONS FOR DRILLING

Material		Hardness HB	Choice	CB	Grade	Conditions (L=3xD + 2xD)						
						v _c [m/min]	Feed [mm/rev]					
							Ø12.5 - 15	Ø15.5 - 21.5	Ø22 - 27.5	Ø28 - 33	Ø34 - 41	Ø42 - 50
A	Low Carbon Steel	80 - 180	1.	M20	DP 5330	180 - 260	0.05 - 0.08	0.06 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.14	0.08 - 0.15
			2.	S20	DP 3000	170 - 250						
		180 - 260	1.	M20	DP 5330	140 - 230	0.06 - 0.11	0.08 - 0.14	0.09 - 0.18	0.12 - 0.22	0.13 - 0.24	0.13 - 0.25
			2.	S20	DP 3000	160 - 220						
	Low Alloy Steel	140 - 250	1.	M20	DP 5330	160 - 220	0.06 - 0.12	0.08 - 0.14	0.10 - 0.17	0.12 - 0.22	0.12 - 0.23	0.13 - 0.24
			2.	S20	DP 3000	140 - 210						
	High Alloy Steel	220 - 450	1.	M20	DP 5330	80 - 180	0.06 - 0.10	0.08 - 0.15	0.10 - 0.19	0.11 - 0.22	0.13 - 0.23	0.14 - 0.25
			2.	S20	DP 3000	120 - 170						
			3.	C20	DP 2235	140 - 210						
R	Ni > 8%	135 - 275	1.	M20	DP 5330	140 - 200	0.06 - 0.09	0.06 - 0.11	0.07 - 0.13	0.09 - 0.14	0.09 - 0.16	0.10 - 0.17
			2.	S20	DP 3000	100 - 150						
	Ferrite / Martensite	135 - 275	1.	C20	DP 2235	170 - 240	0.06 - 0.10	0.06 - 0.12	0.08 - 0.15	0.09 - 0.16	0.10 - 0.17	0.11 - 0.19
			2.	S20	DP 3000	120 - 180						
S	Ti - Alloy	200	1.	M20	DP 5330	30 - 50	0.05 - 0.10	0.05 - 0.12	0.08 - 0.16	0.10 - 0.20	0.11 - 0.21	0.14 - 0.24
			2.	S20	DP 3000	20 - 40						
F	Grey Cast Iron	150 - 220	1.	M20	DP 5330	150 - 280	0.06 - 0.12	0.08 - 0.16	0.12 - 0.19	0.15 - 0.23	0.16 - 0.25	0.18 - 0.28
			2.	S20	DP 3000	180 - 250						
	Graphite	200 - 300	1.	M20	DP 5330	100 - 220	0.06 - 0.09	0.08 - 0.14	0.10 - 0.18	0.12 - 0.20	0.14 - 0.22	0.16 - 0.25
			2.	S20	DP 3000	100 - 200						
N	Aluminium	330 - 380	1.	M20	DP 5330	300 - 350	0.06 - 0.14	0.08 - 0.15	0.10 - 0.20	0.12 - 0.21	0.14 - 0.22	0.15 - 0.24
			2.	S20	DP 3000	250 - 280						
	Copper	150 - 180	1.	M20	DP 5330	220 - 280	0.06 - 0.12	0.08 - 0.13	0.10 - 0.18	0.12 - 0.20	0.14 - 0.21	0.14 - 0.22
			2.	S20	DP 3000	180 - 250						

NOT.....

NOT.....

NOT.....



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