

■ Additional cutting speed recommendations for miscellaneous workpiece materials

Copper-, Brass-, Zinc-Based on a Machinability Index Range of 70-100

Material Group	grade	speed – m/min				Starting Conditions
		250	500	750	1000	m/min
N4	HCK10	◇				275
	HWK10/HWK15	◇				260

Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass, and Glass

Material Group	grade	speed – m/min				Starting Conditions
		250	500	750	1000	m/min
N5	HCK10	◇				275

Carbon and Graphite Composites:
 Brush Alloys, Kevlar, and Graphite (280-400 HB) (30-43 HRC)

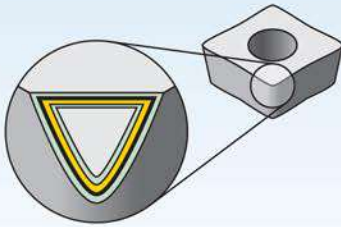
Material Group	grade	speed – m/min				Starting Conditions
		250	500	750	1000	m/min
N6	HCK10	◇				200

MMCs (Aluminium-Based Metal Matrix Composites)

Material Group	grade	speed – m/min				Starting Conditions
		250	500	750	1000	m/min
N7	HCK10	◇				170

Tin Alloys, Cast: ASTM 823, Alloys 1, 2, 3, 11

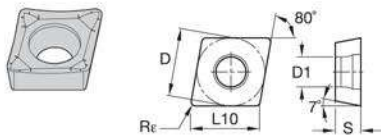
Material Group	grade	speed – m/min				Starting Conditions
		250	500	750	1000	m/min
N8	HCK10	◇				215
	HWK10/HWK15	◇				180



Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

		wear resistance ← → toughness									
		05	10	15	20	25	30	35	40	45	
Grade	HCK10										
	HC-N10		N								
	HWK10										
	HF-N10		N								
	HWK15										
	HF-N15		N								



● first choice
○ alternate choice

P			
M			
K			
N	●	●	●
S			
H			

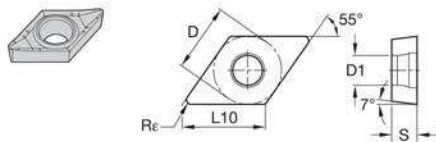


■ **CCGT-AL3**

ISO catalogue number	D	L10	S	Rε	D1	HCK10	HWK10	HWK15
CCGT060202AL3	6,35	6,45	2,38	0,2	2,80	2022257		2022258
CCGT060204AL3	6,35	6,45	2,38	0,4	2,80	2022259		2022260
CCGT09T302AL3	9,53	9,67	3,97	0,2	4,40			2022854
CCGT09T304AL3	9,53	9,67	3,97	0,4	4,40	2022261		2022262
CCGT09T308AL3	9,53	9,67	3,97	0,8	4,40			2022856
CCGT120402AL3	12,70	12,90	4,76	0,2	5,50			2022859
CCGT120404AL3	12,70	12,90	4,76	0,4	5,50	2022323		2022324
CCGT120408AL3	12,70	12,90	4,76	0,8	5,50	2022325		2022326



Inserts

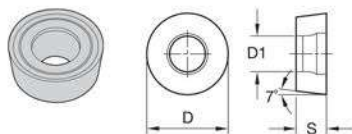


● first choice
○ alternate choice

P			
M			
K			
N	●	●	●
S			
H			

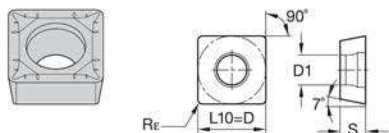
■ DCGT-AL3

ISO catalogue number	D	L10	S	Re	D1	HCK10	HWK10	HWK15
DCGT070202AL3	6,35	7,75	2,38	0,2	2,80	2022327	2022328	2022328
DCGT070204AL3	6,35	7,75	2,38	0,4	2,80	2022329	2022330	2022330
DCGT11T302AL3	9,53	11,63	3,97	0,2	4,40	2014890	2022861	2022861
DCGT11T304AL3	9,53	11,63	3,97	0,4	4,40	2014890	2022331	2022331
DCGT11T308AL3	9,53	11,63	3,97	0,8	4,40	2022332	2022483	2022483



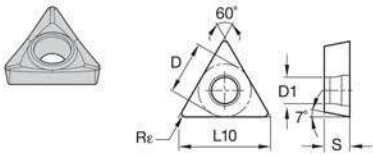
■ RCGT-AL1

ISO catalogue number	D	S	D1	HCK10	HWK10	HWK15
RCGT0803M0AL1	8,00	3,18	3,40	2002473	2002474	2002474



■ SCGT-AL3

ISO catalogue number	D	L10	S	Re	D1	HCK10	HWK10	HWK15
SCGT120408AL3	12,70	12,70	4,76	0,8	5,50	2023638	2023638	2023638



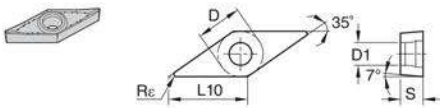
● first choice
○ alternate choice

P			
M			
K			
N	●	●	●
S			
H			



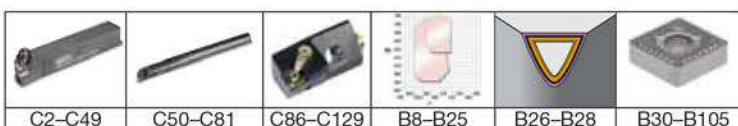
■ **TCGT-AL1**

ISO catalogue number	D	L10	S	Re	D1	HCK10	HWK10	HWK15
TCGT110204AL1	6,35	11,00	2,38	0,4	2,80		2006991	
TCGT16T308AL1	9,53	16,50	3,97	0,8	4,40		2007004	



■ **VCGT-AL3**

ISO catalogue number	D	L10	S	Re	D1	HCK10	HWK10	HWK15
VCGT110302AL3	6,35	11,07	3,18	0,2	2,80			2024559
VCGT110304AL3	6,35	11,07	3,18	0,4	2,80			2024561
VCGT160404AL3	9,53	16,61	4,76	0,4	4,40	2022484		2022485
VCGT160408AL3	9,53	16,61	4,76	0,8	4,40	2022487		2022488
VCGT160412AL3	9,53	16,61	4,76	1,2	4,40	2002503		2022489
VCGT220530AL3	12,70	22,14	5,56	3,0	5,50	2002505		2002506



WIDIA™ Inserts for Machining Aluminium

WIDIA offers a series of inserts specifically designed for machining aluminium materials. These inserts are available in both an uncoated and a PVD grade for better performance and better tool life.

Inserts for Aluminium

- Easy to choose platform — one geometry and two grades.
- Longer tool life.

High positive rake for smooth chip flow.

G tolerance inserts for better precision.



High polish inserts to prevent built-up edge and for longer tool life.

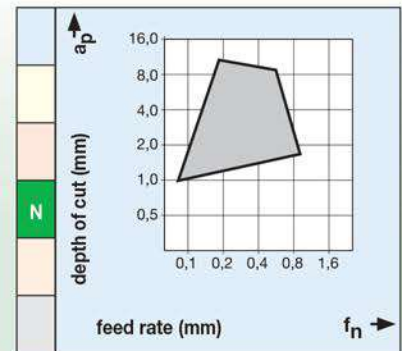


■ Negative Inserts

AL1



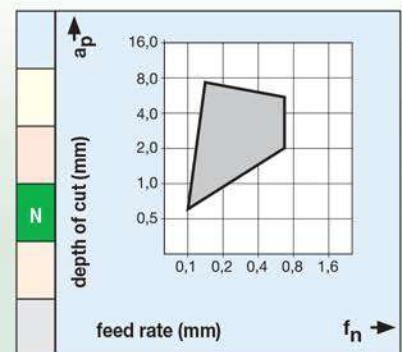
For turning cast aluminium, light alloys, non-ferrous metals, high-melting metals, plastics, glass fibre, reinforced plastics, laminated board, carbon, and fine ceramics.



AL3



For cost-effective machining of aluminium, non-ferrous metals, and plastics. Extremely sharp cutting edges result in optimum part finishes with low cutting forces and short chips. Finishing of steel, stainless steel, and grey iron is possible with the coated grade HCK10™.



■ Step 1 • Select the insert geometry

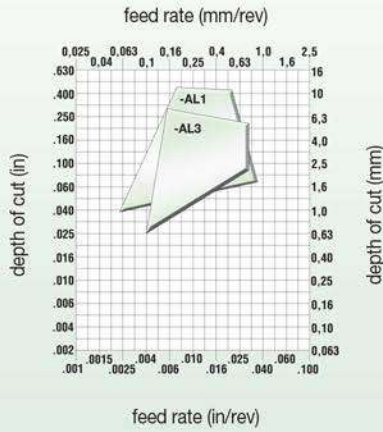
Positive Inserts



AL1



AL3



■ Step 2 • Select the grade

Positive Insert Geometry

cutting condition		-AL1	-AL3
heavily interrupted cut		HCK10/HWK10	HCK10/HWK15
lightly interrupted cut		HCK10/HWK10	HCK10/HWK15
varying depth of cut, casting, or forging skin		HCK10/HWK10	HCK10/HWK15
smooth cut, pre-turned surface		HCK10/HWK10	HCK10/HWK15

■ Step 3 • Selecting the cutting speed

Low-Silicon Aluminium Alloys

(hypoeutectic <12,2% Si) and Magnesium Alloys

speed – m/min

Starting Conditions



Material Group	grade	250	500	750	1000	1250	1500	1750	2000	2250	2500	m/min
N2	HCK10											550

High-Silicon Aluminium Alloys

(hypereutectic >12,2% Si) and Magnesium Alloys

speed – m/min

Starting Conditions



Material Group	grade	250	500	750	1000	1250	1500	1750	2000	2250	2500	m/min
N3	HCK10											550