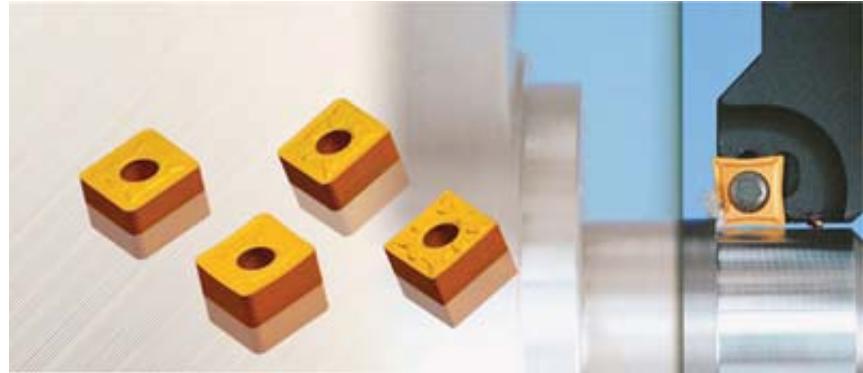


Indexable Inserts

Cemented Carbide Indexable Inserts With the state-of-the-art indexable inserts production line and the advanced manufacturing process in the world, the company provides customers with coated or uncoated indexable inserts for turning, milling, boring, grooving and threading in finishing, semi-finishing or roughing application



Indexable Cutting Ingerts

S  Square (90°)	SNUN	SPUN	SFUN	SPMR-T	SPMR-M	SNMA	SNMM-A
							
	SNMM-ZR53	SNMG-V	SNMG-ZM	SNMG-ZF	SNMG-ZF1	SNMG-ZF3	SNMG-ZG
							
	SCMT-ZPR	SNMG-ZPM	SNMT-ZPF	SNMM-ZMR	SCMT-HMR	SNMG-ZMM	SNMG-ZMF
							
T  Triangle (60°)	TNUN	TPUN	TNMA	TPGA	TPUR-T	TNMM-V	TNMG-A
							
	TCMT-ZF3	TCMT-V	TNMG-ZPF	TNMG-ZPS	TNMG-ZKM	TNMG-ZKF	
							
C  Rhombic (80°)	CNMA	CNMM-V	CNMM-M	CNMM-H	CNMM-ZR	CNMM-ZR51	CNMM-ZM
							
	CCMT	CNMT-V	CCMT-V	CPGT-ZM	CCMT-ZF	CCMT-ZF3	CNMG-ZPR
							
	CCMT-HMR	CCMT-HMM	CNMG-ZMM	CNMG-ZMF	CCMT-HMF	CNMG-ZKR	CCMT-HKR
							
D  Rhombic (55°)	DNMA	DNMM-V	DNMM-M	DNMG-V	DNMG-M	DNMM-ZF	DNMG-ZF
							

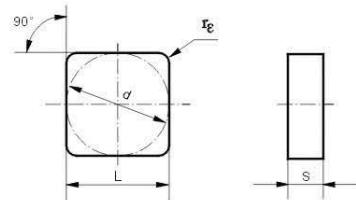
SNMM-H	SNMM-Y	SNMM-M	SNMM-V	SNMM-ZM24	SNMG-ZM24	SNMM-ZR	SNMM-ZR51
							
SCMT-V	SCMT-ZM	SCMT-ZF3	SCGH-ZR54	SCUW	SPGB	SPMW	*SNMG-ZV1
							
SNMG-ZKR	SCMT-HKR	SNMG-ZKM	SCMT-HKF				
							
TNMG-V	TNMG-ZM	TNMG-ZM54	TNMG-ZG	TNUW	TCGW	TCUW	TCMT-ZM
							
CNMG-V	CNMG-ZG	CNMG-ZM	CNMG-ZF	CNMG-ZF2	CNMG-ZR54	CNMG-ZR53	CCCW//CCMW
							
CNMM-ZPQ	CNMG-ZPM	CCMT-HPM	CNMG-ZPF	CCMT-HPF	CNMG-ZPS	CNMM-ZMQ	CNMG-ZMR
							
CCMT-HKM							
							
DNMG-ZF3	DNMG-ZM	DNMG-V	DCMT	DCMT-ZF3	DCMT-V	DCMW	DCMT-HPR
							

	DCMT-HPM	DCMT-HMM	DCMT-HKM	
K				
				
V	VNMA	VNMM-V	VNMG-V	VAGT-ZF
				
W	WNMM-C	WNMM-V	WNMM-ZM	WNMG-ZM
				
R	RNMM	RNMA	RNMM-V	RCMM-ZR51
				
Inserts for cutting -off ,grooving				
Q	QC14	QC07		
				
Milling inserts				
S	SNA(C/K)N-ANN	SNA(C/K)N-ENN	SPMW-ANN	SPFN-T
				
L	LPEX-EDR(L)	LPEN		
				
F	FPCN			
				

VBMT-V	VBMT-ZF3	VBMT-ZM		
				
WNMG-V	WCMT-V	WCMT-ZF3		
				
RCMM-V	RCUT	RPMW	RCMT-V	*RCMX-ZV
				
SPA(C/K)N-EDR(L)	SECN-EER/(L)	SFAN-EER(L)	SPMW-EDR(L)	
				
T	TEC(K)N-PER(L)	TPA(C/K)N-PDR(L)	TPA(C/K)N-PPN	
				

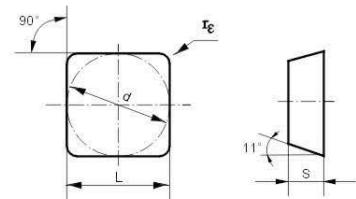
S

SNUN



Type	Dimension (mm)			Grade														
	L=d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNUN090304 SNUN090308	9.525	3.18	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SNUN120408 SNUN120412			0.8															
SNUN150408 SNUN150412 SNUN150416	15.875	4.76	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SNUN190412 SNUN190416 SNUN190608 SNUN190720			1.2															
			1.6															
			2.0															

SPUN

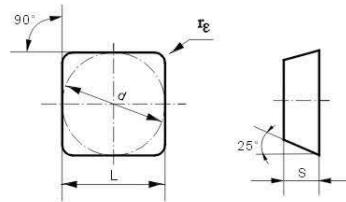


Type	Dimension (mm)			Grade														
	L=d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SPUN090304 SPUN090308	9.525	3.18	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SPUN120304 SPUN120308 SPUN120312			0.8															
SPUN120404	12.70	4.76	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SPUN150408 SPUN150412			0.8															
SPUN190412 SPUN190416 SPUN190720	15.875	4.76	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			1.6															
			2.0															

The range of groove and the choice of grade are for reference.

SFUN

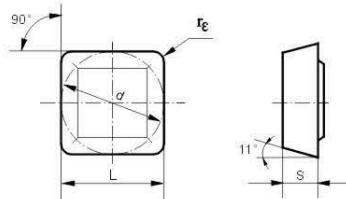
S



Type	Dimension (mm)			Grade
	L=d	S	r _e	
SFUN120304	12.70	3.18	0.4	ZC302 ZC312 ZC304 ZC314 ZP10 ZP20 ZP25 ZP35 ZP40 ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF

SPMR-T

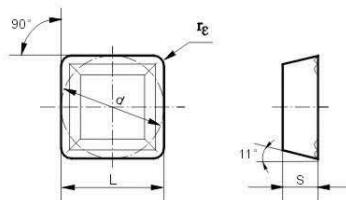
Semi-finishing



Type	Dimension (mm)			Grade
	L=d	S	r _e	
SPMR120304-T	12.70	3.18	0.4	ZC302
SPMR120308-T			0.8	• ZC312
SPMR120312-T			1.2	• ZC304 • ZC314
				ZP10 • ZP20 • ZP25 ZP35 ZP40 • ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF

SPMR-M

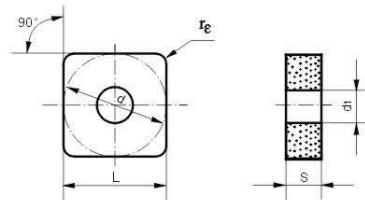
Semi-finishing



Type	Dimension (mm)			Grade
	L=d	S	r _e	
SPMR090304-M15	9.525	3.18	0.4	ZC302
SPMR090308-M15			0.8	• ZC312
SPMR090312-M15			1.2	• ZC304 • ZC314
				ZP10 • ZP20 • ZP25 ZP35 ZP40 • ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF

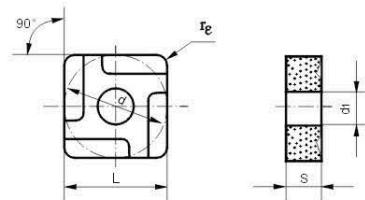
S

SNMA



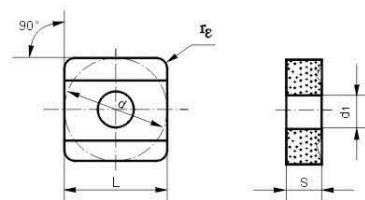
Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMA090408	9.525	4.76	3.81	0.8															
SNMA120404				0.4															
SNMA120408	12.70	4.76	5.16	0.8															
SNMA120412				1.2															
SNMA150608	15.875	6.35	6.35	0.8															
SNMA150612				1.2															
SNMA190612	19.05	6.35	7.94	1.2															
SNMA190616				1.6															

SNMM-A Semi-finishing



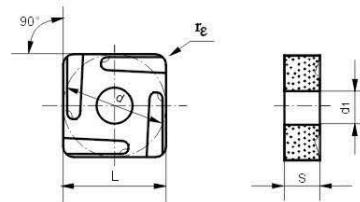
Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMM120408R(L)-A	12.70	4.76	5.16	1.2															
SNMM120412R(L)-A				1.6															
SNMM150608R(L)-A3	15.875	6.35	6.35	0.8															
SNMM190612R(L)-A																			
SNMM190616R(L)-A	19.05	6.35	7.93	1.2															
				1.6															

SNMM-H Roughing



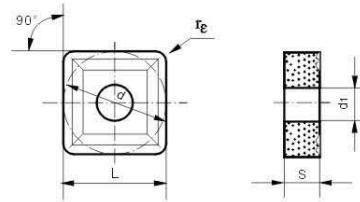
Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMM120408-H3	12.70	4.76	5.16	0.8															
SNMM150608-H5	15.875	6.35	6.35																

SNMM-Y Roughing-semi-finishing



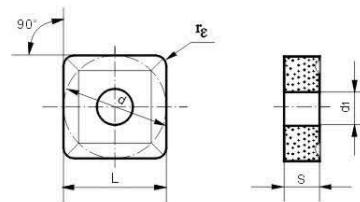
Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMM120408R-Y5	12.70	4.76	5.16	0.8															
SNMM120412L-Y3				1.2															
SNMM150608R(L)-Y6	15.875	6.35	6.35	0.8															

SNMM-M Roughing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMM190612-M3	19.05	6.35	7.94	1.2															
SNMM190616-M2				1.6															

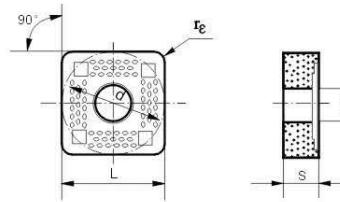
SNMM-V Roughing-semi-finishing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMM120408-V2	12.70	4.76	5.16	0.8															
SNMM120408-V3				0.8															
SNMM120416-V3				1.6															
SNMM150408-V4	15.875	4.76	6.35	0.8															
SNMM150612-V4		6.35	6.35	1.2															
SNMM190612-V3	19.05	6.35	7.94	1.2															
SNMM190616-V4				1.6															

SNMM-ZR51

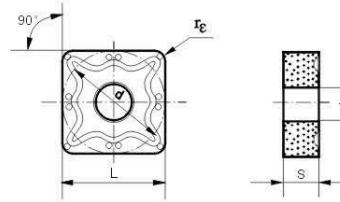
Roughing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMM120412-ZR51	12.70	4.76	5.16	1.2		•	•	•				•	•						•	

SNMM-ZR53

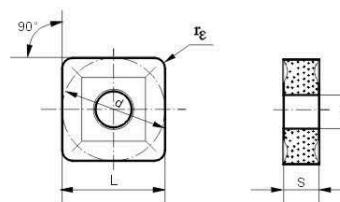
Roughing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMM190625-ZR53	19.05	6.35	7.94	2.5		•	•	•				•	•						•	

SNMG-V

Semi-finishing

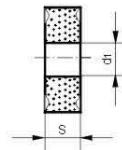
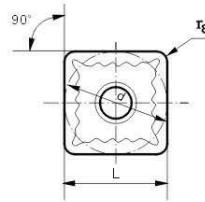


Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG090304-V1 SNMG090308-V1	9.525	3.18	3.81	0.4 0.8			•	•				•	•							
SNMG120404-V2 SNMG120408-V2 SNMG120412-V2	12.70	4.76	5.16	0.4 0.8 1.2			•	•				•	•							
SNMG150404-V1 SNMG150608-V2 SNMG150612-V2	15.875	6.35	6.35	0.4 0.8 1.2			•	•				•	•							
SNMG190608-V3 SNMG190612-V2	19.05	6.35	7.94	0.8 1.2			•	•				•	•							

S

SNMG-ZM

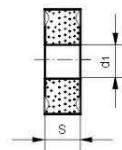
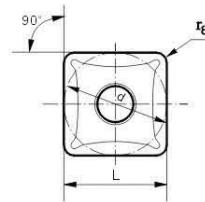
Semi-finishing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMG120408-ZM	12.70	4.76	5.16	0.8	•			•	•		•								
SNMG120412-ZM				1.2	•	•		•	•	•	•								
SNMG150608-ZM	15.875	6.35	6.35	0.8	•	•	•	•	•	•	•								
SNMG190620-ZM	19.05	6.35	7.94	2.0	•	•	•	•	•	•	•								

SNMG-ZF

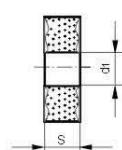
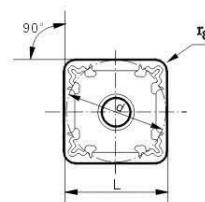
Finishing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMG120404-ZF	12.70	4.76	5.16	0.4	•	•		•	•	•	•					•			

SNMG-ZF1

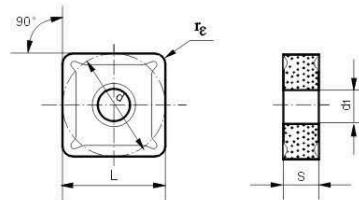
Super-Finishing



Type	Dimension (mm)				Grade																
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZC422	ZC424	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMG120404-ZF1	12.70	4.76	5.16	0.4	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•

SNMG-ZF3

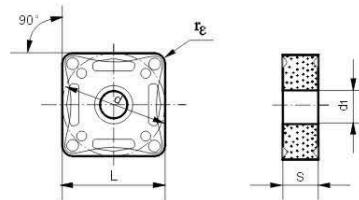
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG120408-ZF3	12.70	4.76	5.16	0.8	•	•			•							•				
SNMG120412-ZF3				1.2																

SNMG-ZG

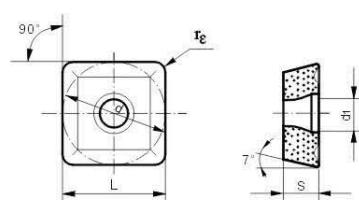
Roughing-semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG120412-ZG	12.70	4.76	5.16	1.2																

SCMT-V

Semi-finishing

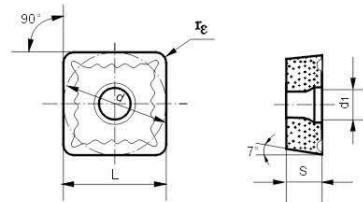
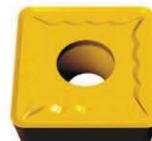


Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCMT060202-V0	6.40	2.78	2.80	0.2																
SCMT120404-V0	12.70	4.76	5.50	0.4																
SCMT120408-V2				0.8																

S

SCMT-ZM

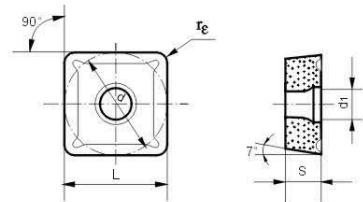
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCMT120408-ZM	12.70	4.76	5.50	0.8																
SCMT120412-ZM				1.2																

SCMT-ZF3

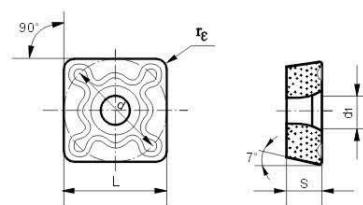
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCMT09T304-ZF3	9.525	3.97	4.40	0.4																
SCMT120404-ZF3				0.4																
SCMT120408-ZF3	12.70	4.76	5.50	0.8																
SCMT120412-ZF3				1.2																

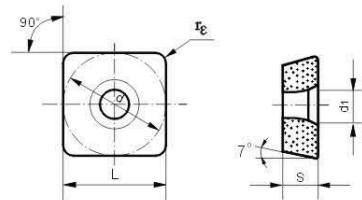
SCGH-ZR54

Roughing



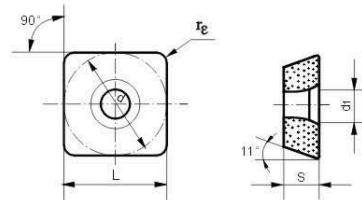
Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCGH120308-ZR54	12.70	3.18	5.50	0.8																

SCUW



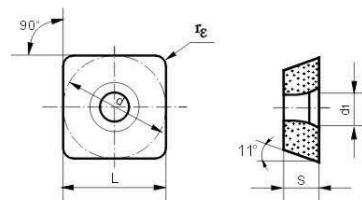
Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SCUW090302	9.525	3.18	4.40	0.2															
SCUW120404	12.70	4.76	5.50	0.4															

SPGB



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SPGB090304				0.4															
SPGB090308	9.525	3.18	4.40	0.8															
SPGB090312				1.2															

SPMW

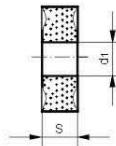
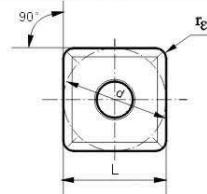


Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SPMW150408	15.875	4.76	5.50	0.8															

S

SNMG-ZV

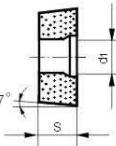
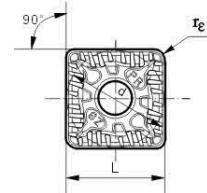
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
*SNMG150616-ZV1	15.875	6.35	6.35	1.6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

SCMT-ZPR

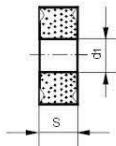
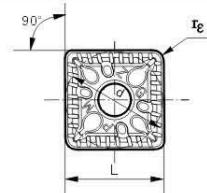
Roughing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SCMT120412-ZPR	12.70	4.76	5.5	1.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

SNMG-ZPM

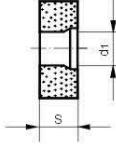
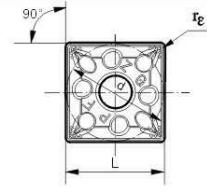
Semi-finishing



Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMG120412-ZPM	12.70	4.76	5.16	1.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SNMG120408-ZPM	12.70	4.76	5.16	0.8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

SNMT-ZPF

Finishing

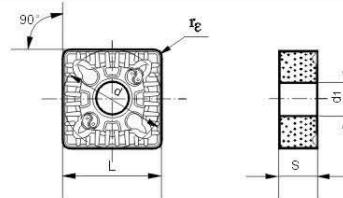


Type	Dimension (mm)				Grade														
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
SNMT090304-ZPF	9.70	3.18	4.40	0.4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

S

SNMM-ZMR

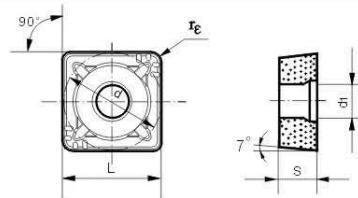
Roughing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMM150616-ZMR	15.875	6.35	6.35	1.6			*													

SCMT-HMR

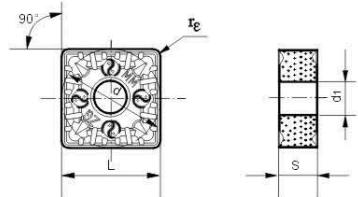
Roughing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCMT120412-HMR	12.70	4.76	5.5	1.2			*													

SNMG-ZMM

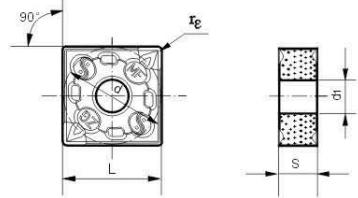
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG120408-ZMM	12.70	4.76	5.5	0.8			*													

SNMG-ZMF

Finishing

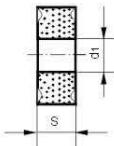
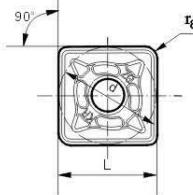


Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG090304-ZMF	9.525	3.18	4.4	0.4	*	*			*		*									

S

SNMG-ZKR

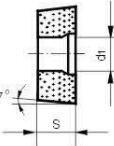
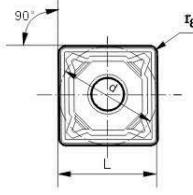
Roughing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UK	ZK20	ZK20UK	ZK30	ZK30UK
SNMG150616-ZKR	15.875	6.35	6.35	1.6				●				●	●	●	●	●	●	●	●	●

SCMT-HKR

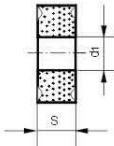
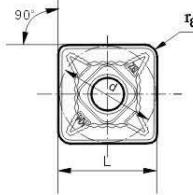
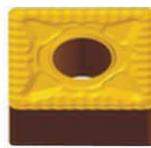
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UK	ZK20	ZK20UK	ZK30	ZK30UK
SCMT120412-HKR	12.90	12.70	4.76	5.16	1.2										●			●	●	●	●

SNMG-ZKM

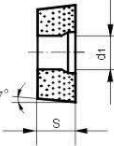
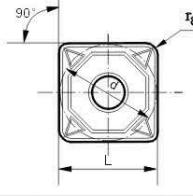
Semi-finishing



Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SNMG120408-ZKM	12.70	4.76	5.16	0.8												●	●			

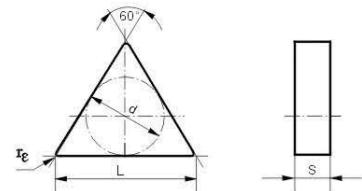
SCMT-HKF

Finishing



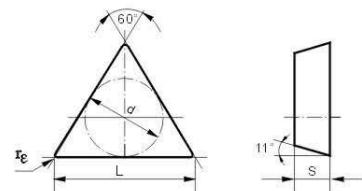
Type	Dimension (mm)				Grade															
	L=d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
SCMT090304-HKF	9.525	3.18	0.4	0.4											●					

TNUN



Type	Dimension (mm)				Grade															
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNUN090204	9.6	5.56	2.38	0.4																
TPUN110304	11.0	6.35	3.18	0.4																
TPUN110308				0.8																
TPUN160412	16.5	9.525	4.76	1.2																
TPUN220408				0.8																
TPUN220412	22.0	12.70	4.76	1.2																
TPUN220416				1.6																

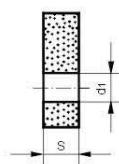
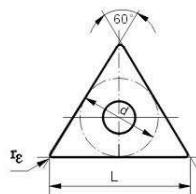
TPUN



Type	Dimension (mm)				Grade															
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TPUN090204	9.60	5.56	2.38	0.4																
TPUN090308			3.18	0.8																
TPUN110304	11.0	6.35	3.18	0.4																
TPUN110308				0.8																
TPUN160304				0.4																
TPUN160308	16.5	9.525	3.18	0.8																
TPUN160312				1.2																
TPUN160408	16.5	9.525	4.76	0.8																
TPUN220404				0.4																
TPUN220408	22.0	12.70	4.76	0.8																
TPUN220412				1.2																
TPUN220416				1.6																

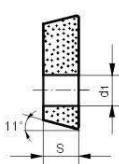
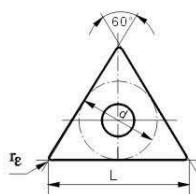
T

TNMA



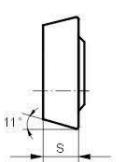
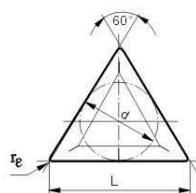
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMA110304	11.0	6.35	3.18	2.80	0.4							•	•								
TNMA160404					0.4							•	•								
TNMA160408	16.5	9.525	4.76	3.81	0.8							•	•								
TNMA160412					1.2							•	•								
TNMA220408					0.8							•	•								
TNMA220412	22.0	12.70	4.76	5.16	1.2							•	•								
TNMA220432					3.2							•	•								
TNMA270608					0.8							•	•								
TNMA270612	27.5	15.875	6.35	6.35	1.2							•	•								

TPGA



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TPGA090204	9.6	5.56	2.38	2.50	0.4	•	•			•							•				

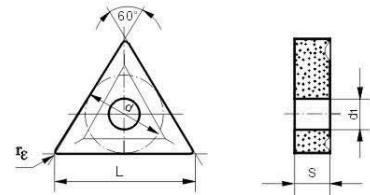
TPUR-T



Type	Dimension (mm)					Grade															
	L	d	S	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF	
TPUR110304-T	11.0	6.35	3.18	0.4								•									
TPUR110308-T				0.8								•									

TNMM-V

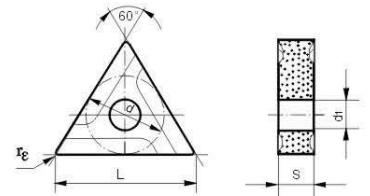
Roughing-semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMM160408-V2	16.5	9.525	4.76	3.81	0.8	●	●														
TNMM220412-V2(V3)	22.0	12.70	4.76	5.16	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

TNMG-A

Finishing

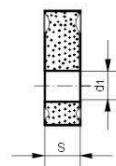
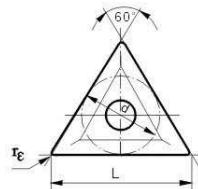


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM50	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG110304-A1	11.0	6.35	3.18	2.80	0.4	●	●														
TNMG160404-A2	16.5	9.525	4.76	5.50	0.4	●	●														
TNMG160408-A2					0.8	●	●	●													
TNMG220404-A2	22.0	12.70	4.76	5.50	0.4	●	●	●													
TNMG220408-A2					0.8	●	●	●													

T

TNMG-V

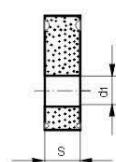
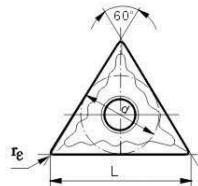
Semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
TNMG110304-V0 TNMG110308-V0	11.0	6.35	3.18	2.80	0.4 0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
TNMG160304-V2 TNMG160308-V2 TNMG160312-V2 TNMG160316-V2	16.5	9.525	3.18	3.81	0.4 0.8 1.2 1.6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
TNMG160404-V2 TNMG160408-V2 TNMG160412-V2	16.5	9.525	4.76	3.81	0.4 0.8 1.2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
TNMG220404-V2 TNMG220408-V2 TNMG220412-V2	22.0	12.70	4.76	5.16	0.4 0.8 1.2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
TNMG270408-V4 TNMG270608-V2 TNMG270612-V2	27.5	15.875	4.76 6.35 6.35	6.35 6.35 6.35	0.8 0.8 1.2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	

TNMG-ZM

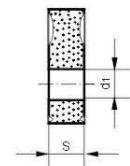
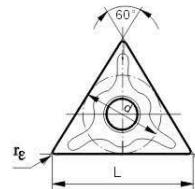
Semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
TNMG160404-ZM TNMG160408-ZM	16.5	9.525	4.76	3.81	0.4 0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
TNMG270616-ZM	27.5	15.875	6.35	6.35	1.6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

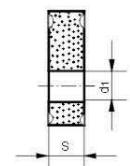
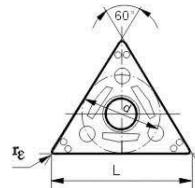
TNMG-ZM54

Roughing



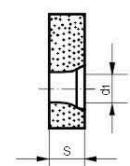
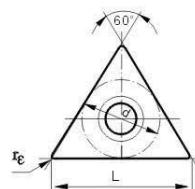
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG160408-ZM54	16.5	9.525	4.76	3.81	0.8	●	●													●	●

TNMG-ZG



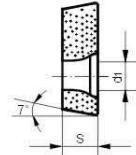
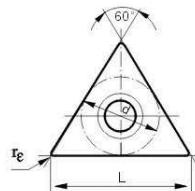
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG220416-ZG	22.0	12.70	4.76	5.16	1.6															●	●

TNUW



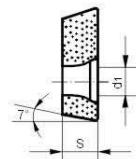
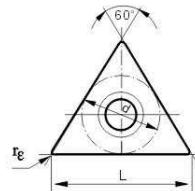
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNUW090202 TNUW090204	9.6	5.56	2.38	2.50	0.2 0.4					●											
TNUW160304 TNUW160408	16.5	9.525	3.18 4.76	4.40	0.4 0.8					●	●	●	●	●							
TNUW220404 TNUW220408	22.0	12.70	4.76	5.50	0.4 0.8					●	●	●	●	●							

TCGWI



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZH30	ZH30UF
TCGW110204	11.0	6.35	2.38	2.80	0.4	●	●										●				
TCGW16T304	16.5	9.525	3.97	4.40	0.4	●	●										●				

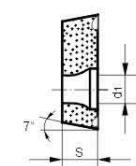
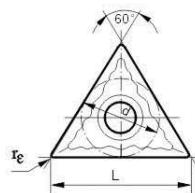
TCUWI



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _E	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TCUW110304	11.0	6.35	3.18	2.80	0.4	•	•			•							•				

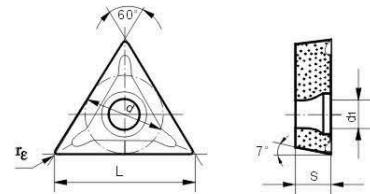
TCMT-ZM

Semi-finishing



TCMT-ZF3

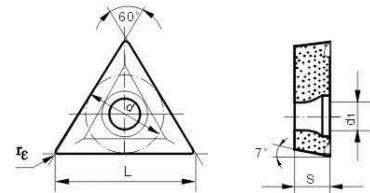
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TCMT16T308-ZF3	16.5	9.525	3.97	4.40	0.8	•	•								•						
TCMT16T312-ZF3					1.2	•	•	•		•	•				•		•				
TCMT220412-ZF3	22.0	12.70	4.76	5.50	1.2	•	•			•					•		•		•		

TCMT-V

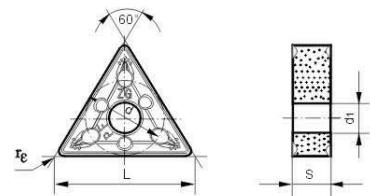
Roughing-semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TCMT090202-V0	9.6	5.56	2.38	2.50	0.2																
TCMT090204-V0					0.4																
TCMT090208-V0					0.8																
TCMT110202-V0	11.0	6.35	2.38	2.80	0.2																
TCMT110208-V0					0.8																
TCMT16T304-V1	16.5	9.525	3.97	4.40	0.4																
TCMT16T308-V1					0.4																
TCMT220408-V1(V2)	22.0	12.70	4.76	5.50	0.8																

TNMG-ZPF

Finishing

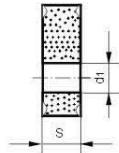
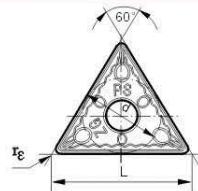


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG160404-ZPF	16.1	9.525	4.76	3.81	0.4	•	•			•	•	•									

T

TNMG-ZPS

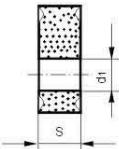
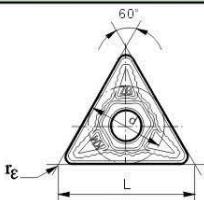
Super-Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG160404-ZPS	16.1	9.525	4.76	3.81	0.4	*			*							*					

TNMG-ZKM

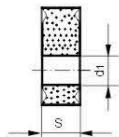
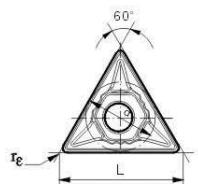
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG220412-ZKM	22.0	12.70	4.76	5.16	1.2											*	*				

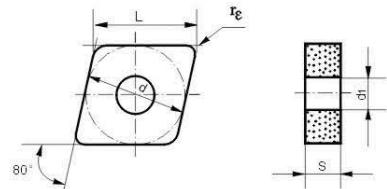
TNMG-ZKF

Finishing



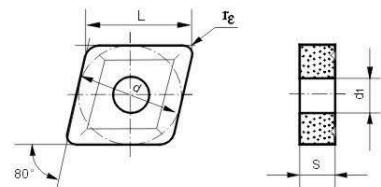
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
TNMG220408-ZKF	22.0	12.70	4.76	5.16	0.8											*					
TNMG160408-ZKF	16.5	9.525	4.76	3.18	0.8											*					

CNMA



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMA120404	12.9	12.70	4.76	5.16	0.4																
CNMA120408					0.8																
CNMA120412					1.2																
CNMA160404	16.1	15.875	4.76	6.35	0.4																
CNMA160408					0.8																
CNMA190608	19.3	19.05	6.35	7.93	0.8																
CNMA190612					1.2																

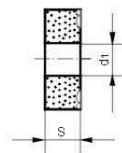
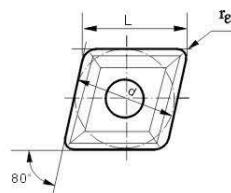
CNMM-V Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMM120404-V2(V3)	12.9	12.70	4.76	5.16	0.4	•	•	•	•												
CNMM160608-V3	16.1	15.875	6.35	6.35	0.8	•	•	•	•												
CNMM160612-V4					1.2	•	•	•	•												
CNMM190608-V4						•	•	•	•												
CNMM190612-V4						•	•	•	•												
CNMM190616-V3(V5)						•	•	•	•												

CNMM-M

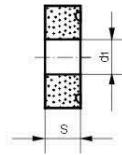
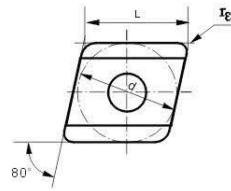
Semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CNMM120408-M2	12.9	12.70	4.76	5.16	0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CNMM190616-M3	19.3	19.05	6.35	7.93	1.6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

CNMM-H

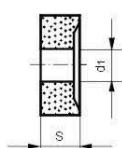
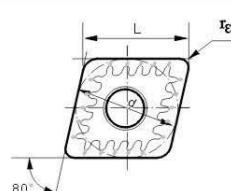
Roughing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CNMM120408R-H3	12.9	12.70	4.76	5.16	0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CNMM160608R(L)-H3	16.1	15.875	6.35	6.35	0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

CNMM-ZR

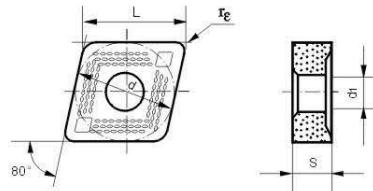
Roughing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CNMM160612-ZR	16.1	15.875	6.35	6.35	1.2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

CNMM-ZR51

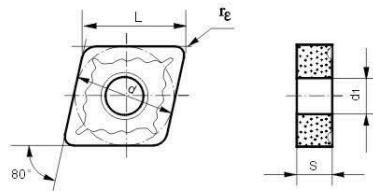
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMM160608-ZR51	16.1	15.875	6.35	6.35	0.8																

CNMM-ZM

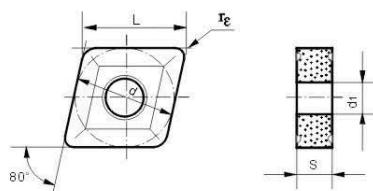
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMM120408-ZM	12.9	12.70	4.76	5.16	0.8	•	•	•	•	•	•	•									
CNMM120412-ZM					1.2	•	•	•	•	•	•	•									

CNMG-V

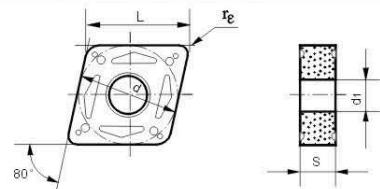
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG090304-V1	9.7	9.525	3.18	3.81	0.4	•	•	•	•	•	•	•									
CNMG120404-V2					0.4																
CNMG120408-V2	12.9	12.70	4.76	5.16	0.8	•	•	•	•	•	•	•									
CNMG120412-V2					1.2	•	•	•	•	•	•	•									
CNMG160404-V2					0.4																
CNMG160606-V3					0.6																
CNMG160608-V3	16.1	15.875	6.35	6.35	0.8	•	•	•	•	•	•	•									
CNMG160612-V3					1.2	•	•	•	•	•	•	•									
CNMG190608-V2					0.8																
CNMG190612-V2	19.3	19.05	6.35	7.93	1.2	•	•	•	•	•	•	•									
CNMG190616-V3					1.6	•	•	•	•	•	•	•									

CNMG-ZG

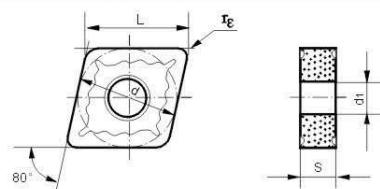
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120408-ZG	12.9	12.70	4.76	5.16	1.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

CNMG-ZM

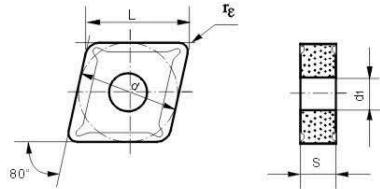
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120408-ZM	12.9	12.70	4.76	5.16	0.8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CNMG120412-ZM					1.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CNMG160608-ZM	16.1	15.875	6.35	6.35	0.8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

CNMG-ZF

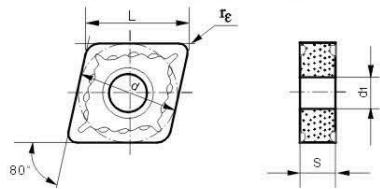
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120408-ZF	12.9	12.70	4.76	5.16	0.8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

CNMG-ZF2

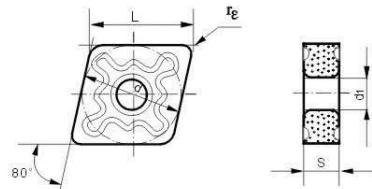
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120404-ZF2	12.9	12.70	4.76	5.16	0.4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

CNMG-ZR54

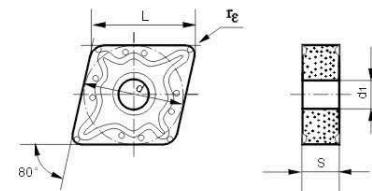
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG190612-ZR54	19.3	19.05	6.35	7.93	1.2																

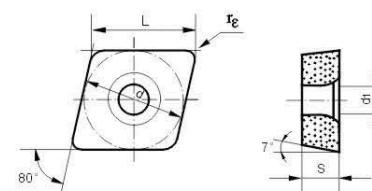
CNMG-ZR53

Roughing



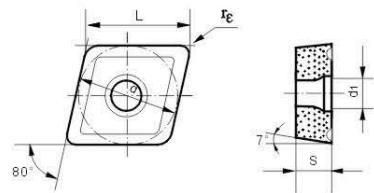
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG190612-ZR53	19.3	19.05	6.35	7.93	1.2																

CCCW/CCMW



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CCCW090304	9.7	9.525	3.18	3.81	0.4	•	•	•	•											
CCCW090504			5.56	3.81	0.4															
CCMW09T302			3.97	4.40	0.2															
CCMW120404	12.9	12.70	4.76	5.50	0.4															
CCMW120406					0.8															

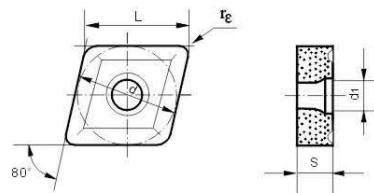
CCMT



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _E	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT09T304	9.7	9.525	3.97	4.40	0.4	•	•			•						•					

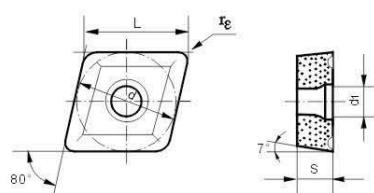
C

CNMT-V Finishing



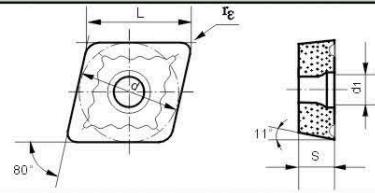
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _E	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMT060202-V	6.4	6.35	2.38	2.80	0.2			•	•			•									
CNMT09T304-V	9.7	9.525	3.97	4.40	0.4			•	•			•					•		•		

CCMT-V Finishing-Semi-finishing



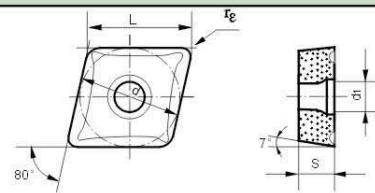
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _E	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT060202-V0	6.4	6.35	2.38	2.80	0.2	•	•	•	•			•									
CCMT060204-V0					0.4	•	•	•	•			•					•	•			
CCMT060208-V0					0.8	•	•	•	•			•					•	•			
CCMT09T304-V1	9.7	9.525	3.97	4.40	0.4	•	•	•	•			•						•	•		
CCMT120404-V2	12.9	12.70	4.76	5.50	0.4													•	•		

CPGT-ZM | Semi-finishing



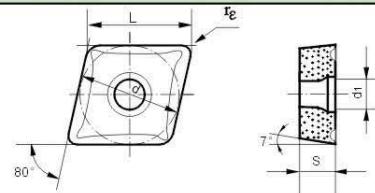
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UK	ZK20	ZK20UK	ZK30	ZK30UK
CPGT060204-ZM	6.4	6.35	2.38	2.80	0.4	•	•			•						•					

CCMT-ZF | Finishing



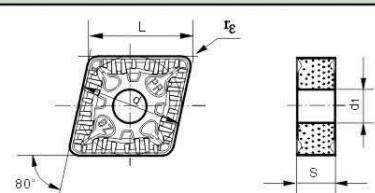
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT09T304-ZF	9.7	9.525	3.97	4.40	0.4	•	•	•	•	•	•	•			•		•				
CCMT09T308-ZF					0.8	•	•	•	•	•	•	•			•		•				

CCMT-ZF3 | Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT09T302-ZF3	9.7	9.525	3.97	4.40	0.2	•	•	•	•	•	•	•			•		•				
CCMT09T308-ZF3					0.8	•	•	•	•	•	•	•			•		•				
CCMT120404-ZF3					0.4	•	•	•	•	•	•	•			•		•				
CCMT120408-ZF3					0.8	•	•	•	•	•	•	•			•		•				
CCMT120412-ZF3	12.9	12.70	4.76	5.50	1.2	•	•	•	•	•	•	•			•		•				

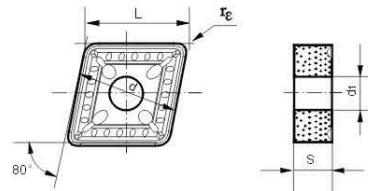
CNMG-ZPR | Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG160616-ZPR	16.1	15.875	6.35	6.35	1.6					•			•	•	•	•	•				

CNMM-ZPQ

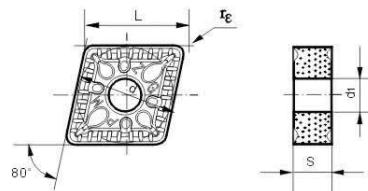
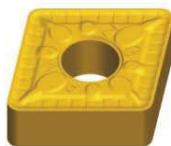
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMM160616-ZPQ	16.1	15.875	6.35	6.35	1.6				•			•	•	•	•	•					

CNMG-ZPM

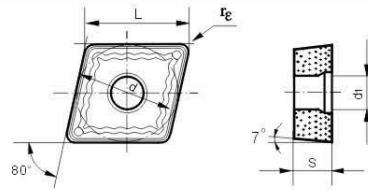
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120412-ZPM	12.9	12.7	4.76	5.16	1.2				•			•	•	•	•	•					
CNMG120408-ZPM	12.9	12.7	4.76	5.16	0.8				•			•	•	•	•	•					

CCMT-HPM

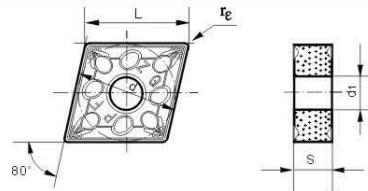
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT090308-HPM	9.70	9.525	3.18	4.4	0.8				•			•			•	•					

CNMG-ZPF

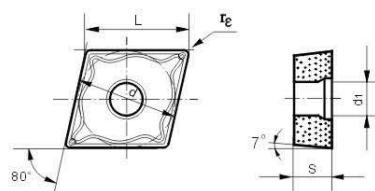
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120404-ZPF	12.9	12.7	4.76	5.16	0.4	•	•			•		•		•	•	•	•	•	•	•	•

CCMT-HPF

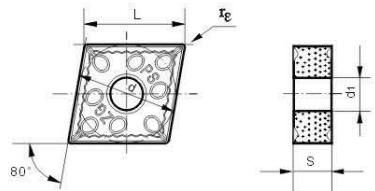
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT090304-HPF	9.70	9.525	3.18	4.40	0.4	●	●			●	●										

CNMG-ZPS

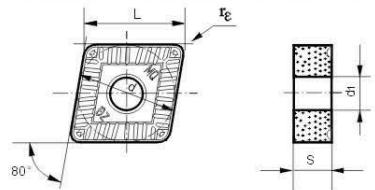
Super-Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120404-ZPS	12.9	12.7	4.76	5.16	0.4	●				●							●				

CNMM-ZMQ

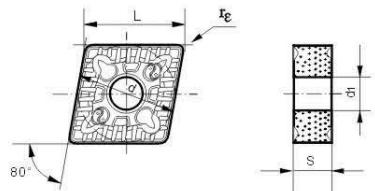
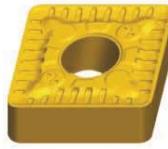
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMM160616-ZMQ	16.1	15.875	6.35	6.35	1.6											●		●	●		

CNMG-ZMR

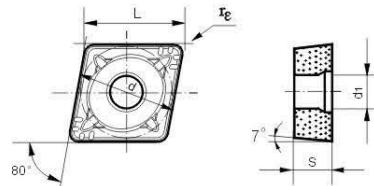
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG160616-ZMR	16.1	15.875	6.35	6.35	1.6					●					●	●					

CCMT-HMR

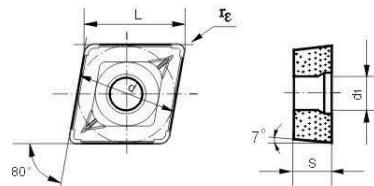
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT120412-HMR	12.90	12.7	4.76	5.5	1.2	●			●	●	●	●	●	●	●	●	●	●	●	●	●

CCMT-HMM

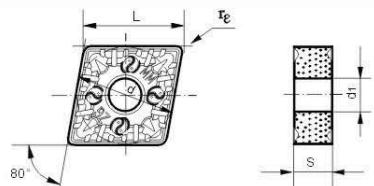
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CCMT090308-HMM	9.7	9.525	3.18	4.4	0.8	●			●	●	●	●	●	●	●	●	●	●	●	●	●
CCMT120404-HMM	12.90	12.7	4.76	5.5	0.4	●			●	●	●	●	●	●	●	●	●	●	●	●	●

CNMG-ZMM

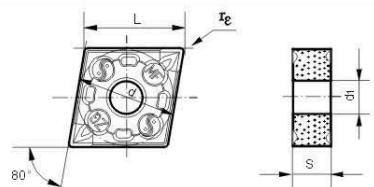
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120408-ZMM	12.90	12.7	4.76	5.5	0.8	●			●	●	●	●	●	●	●	●	●	●	●	●	●

CNMG-ZMF

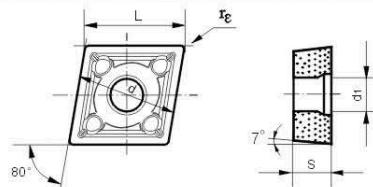
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
CNMG120404-ZMF	12.90	12.7	4.76	5.5	0.4	●	●			●	●	●	●	●	●	●	●	●	●	●	●

CCMT-HMF

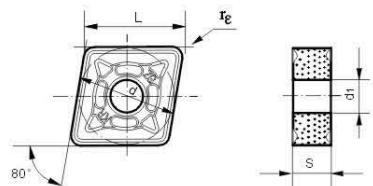
Finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CCMT090304-HMF	9.70	9.525	3.18	4.4	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

CNMG-ZKR

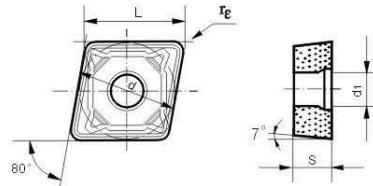
Roughing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CNMG160616-ZKR	16.1	15.875	6.35	6.35	1.6					●			●	●	●	●	●	●	●	●

CCMT-HKR

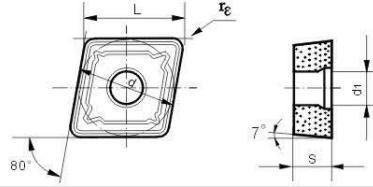
Roughing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CCMT120412-HKR	12.9	12.70	4.76	5.5	1.2					●			●	●	●	●	●	●	●	●

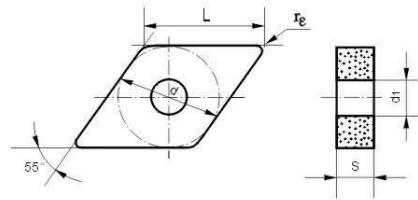
CCMT-HKM

Semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
CCMT090308-HKM	9.7	9.525	3.18	4.40	0.8										●	●	●	●	●	●

DNMA

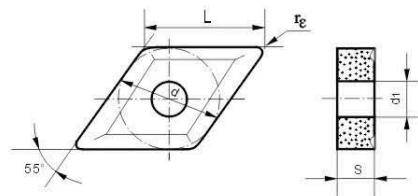


Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
DNMA110404	11.6	9.525	4.76	3.81	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA150404			4.76		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA150408	15.5	12.70	4.76	5.16	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA150604			6.35		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA150612			6.35		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA190612	19.3	15.875	6.35	6.35	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

D

DNMM-V

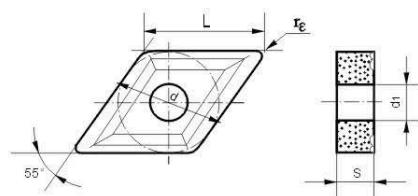
Roughing-semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
DNMM150404-V2					0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMM150608-V2	15.5	12.70	6.35	5.16	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMM150612-V3					1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMM150616-V3					1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMM190608-V2	19.3	15.875	6.35	6.35	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

DNMM-M

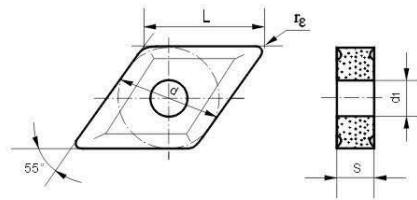
Roughing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
DNMM190612-M4	19.3	15.875	6.35	6.35	1.2					●	●				●	●	●	●	●	●

DNMG-V

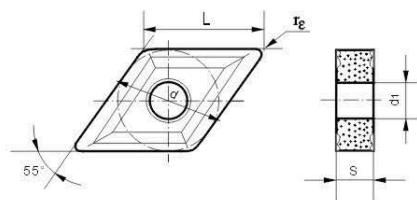
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG150608-V2	15.5	12.70	6.35	5.16	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
DNMG190608-V2	19.3	15.875	6.35	6.35	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

DNMG-M

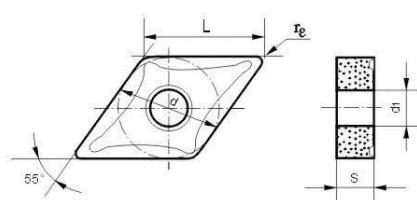
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG150608-M1	15.5	12.70	6.35	5.16	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

DNMM-ZF

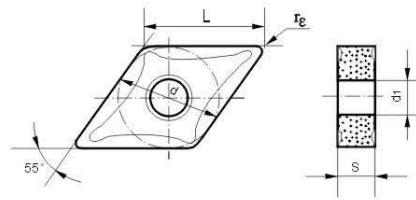
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMM150604-ZF	15.5	12.70	6.35	5.16	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

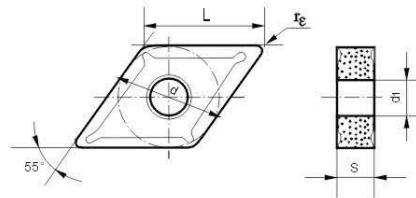
D

DNMG-ZF Finishing



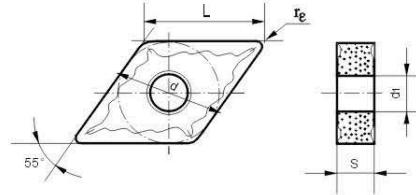
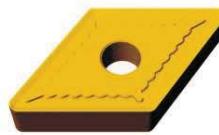
Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG110304-ZF	11.6	9.525	3.18	3.81	0.4	•	•														
DNMG110404-ZF		4.76			0.4	•	•	•		•	•										
DNMG150404-ZF	15.5	12.70	4.76	5.16	0.4	•	•	•		•	•										

DNMG-ZF3 Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG110308-ZF3	11.6	9.525	3.18	3.81	0.4	•	•														
DNMG150616-ZF3	15.5	12.70	6.35	5.16	1.2	•	•														

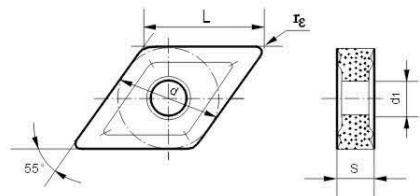
DNMG-ZM Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG150308-ZM			3.18		0.8	•	•	•	•	•	•	•	•	•							
DNMG150408-ZM			4.76		0.8	•	•	•	•	•	•	•	•	•							
DNMG150608-ZM	15.5	12.70	6.35	5.16	0.8	•	•	•	•	•	•	•	•	•							
DNMG150608-ZM			6.35		1.2	•	•	•	•	•	•	•	•	•							

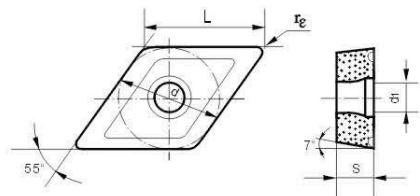
DNMG-V

Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DNMG150408-V2	15.5	12.70	4.76	5.16	0.8																
DNMG150412-V2			4.76	6.35	1.2																
DNMG150612-V2			6.35		1.2																

DCMT

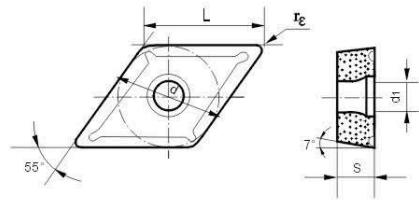


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT070204	7.75	6.35	2.88	2.80	0.4	•	•	•	•												
DCMT11T308	11.6	9.525	3.97	4.40	0.8	•	•	•	•												

D

DCMT-ZF3

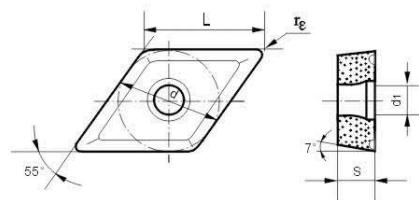
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT11T304-ZF3	11.6	9.525	3.97	4.40	0.4 1.2	• •															
DCMT11T312-ZF3																					

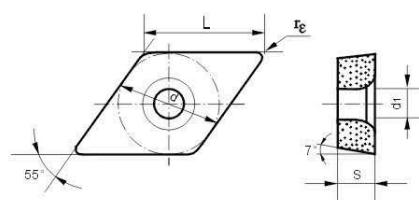
DCMT-V

Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT070202-V0	7.75	6.35	2.38	2.80	0.2 0.4	• •															
DCMT070204-V0																					
DCMT11T302-V1	11.6	9.525	3.97	4.40	0.2 0.4 0.8	• • •															
DCMT11T304-V1																					
DCMT11T308-V1																					
DCMT150404-V2	15.5	12.70	4.76	5.50	0.4	• • •															

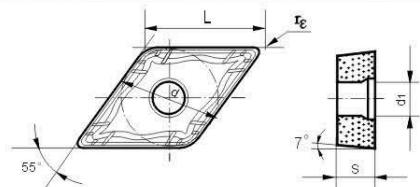
DCMW



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
DCMW070202	7.75	6.35	2.38	2.80	0.2	• •														
DCMW11T302	11.6	9.525	3.97	4.40	0.2	• •														

DCMT-HPR

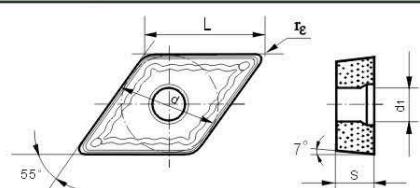
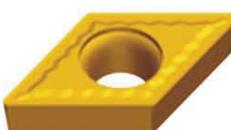
Roughing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT11T312-HPR	11.6	9.525	3.97	4.4	1.2										*					*	

DCMT-HPM

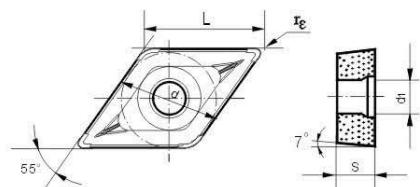
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT11T308-HPM	11.6	9.525	3.97	4.4	0.8										*					*	

DCMT-HMM

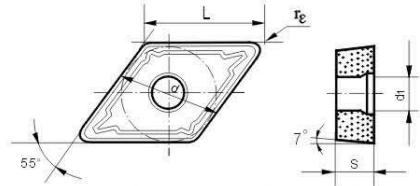
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT11T308-HMM	11.6	9.525	3.97	3.81	0.8										*					*	

DCMT-HKM

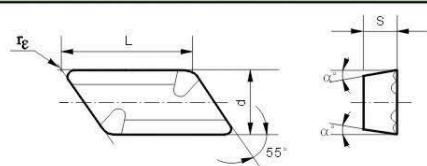
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
DCMT11T308-HKM	11.6	9.525	3.97	3.81	0.8										*	*	*	*	*	*	

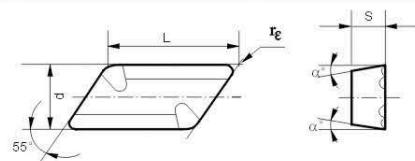
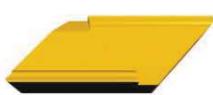
D

KOUX-L11



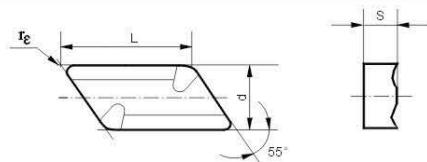
Type	Dimension (mm)				Grade														
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
KOUX160405-L11	16.0	9.525	4.76	0.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

KOUX-R11



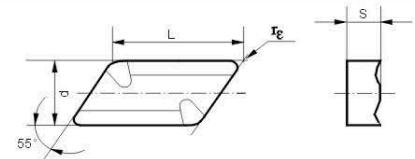
Type	Dimension (mm)				Grade														
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
KOUX160405-R11	16.0	9.525	4.76	0.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

KNUX-L11



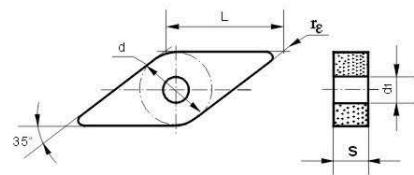
Type	Dimension (mm)				Grade														
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
KNUX160405-L11	16.0	9.525	4.76	0.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

KNUX-R11



Type	Dimension (mm)				Grade														
	L	d	S	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
KNUX160405-R11	16.0	9.525	4.76	0.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

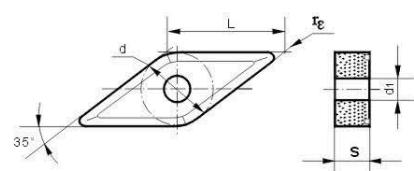
VNMA



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
VNMA110304	11.0	6.35	3.18	3.40	0.4	•	•										•				
VNMA160404	16.6	9.525	4.76	3.81	0.4	•	•	•									•				
VNMA160412					1.2	•	•	•									•				
VNMA220408	22.1	12.70	4.76	5.16	0.8	•	•										•				
VNMA220612			6.35		1.2	•	•										•				

VNMM-V

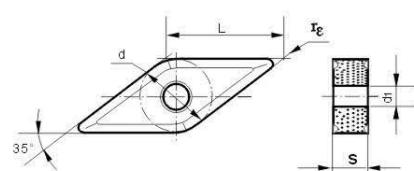
Semi-finishing



Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
VNMM160504-V1	16.6	9.525	5.18	3.81	0.4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

VNMG-V

Semi-finishing

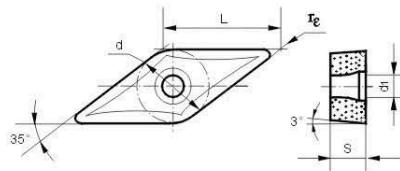


Type	Dimension (mm)					Grade														
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
VNMG160404-V1	16.6	9.525	4.76	3.81	0.4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
VNMG160408-V1					0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

V

VAGT-ZF

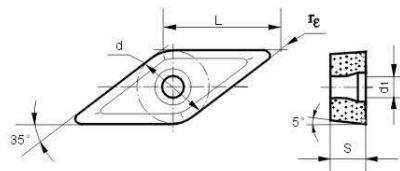
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
VAGT160408-ZF	16.6	9.525	4.76	4.40	0.8	●	●			●											

VBMT-V

Semi-finishing

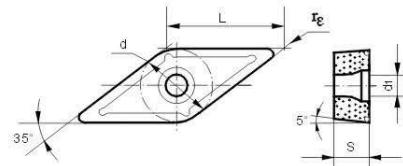


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
VBMT160404-V1	16.6	9.525	4.76	4.40	0.4	●	●	●	●	●	●										

V

VBMT-ZF3

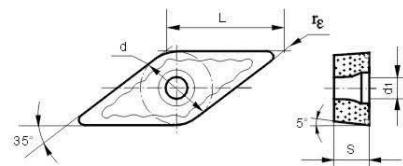
Finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
VBMT160404-ZF3	16.6	9.525	4.76	4.40	0.4	●	●			●											

VBMT-ZM

Semi-finishing

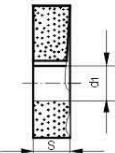
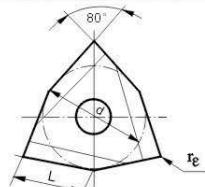


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _ε	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
VBMT160412-ZM	16.6	9.525	4.76	4.40	1.2	●	●	●	●	●											

V

WNMM-C

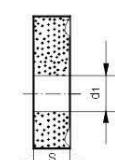
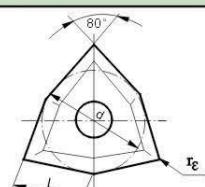
Semi-finishing



Type	Dimension (mm)					Grade
	L	d	S	d ₁	r _e	
WNMM080404-C3	8.68	12.70	4.76	5.16	0.4	ZC302
WNMM080408-C3					0.8	ZC312 ZC304 ZC314 ZP10 ZP20 ZP25 ZP35 ZP40 ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF

WNMM-V

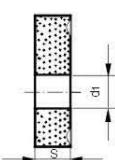
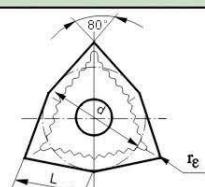
Semi-finishing



Type	Dimension (mm)					Grade
	L	d	S	d ₁	r _e	
WNMM080408-V2	8.68	12.70	4.76	5.16	0.8	ZC302 ZC312 ZC304 ZC314 ZP10 ZP20 ZP25 ZP35 ZP40 ZM15 ZM30
WNMM100612-V4	10.86	15.875	6.35	6.35	1.2	ZK20 ZK20UF
WNMM160404-V1	16.1	23.54	4.76	9.12	0.4	ZK30
WNMM160408-V1					0.8	ZK30UF

WNMM-ZM

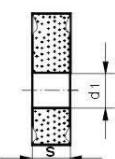
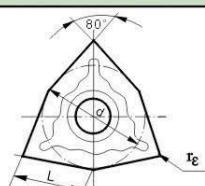
Semi-finishing



Type	Dimension (mm)					Grade
	L	d	S	d ₁	r _e	
WNMM100608-ZM	10.86	15.875	6.35	6.35	0.8	ZC302 ZC312 ZC304 ZC314 ZP10 ZP20 ZP25 ZP35 ZP40 ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF

WNMG-ZM

Semi-finishing

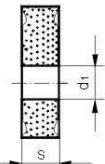
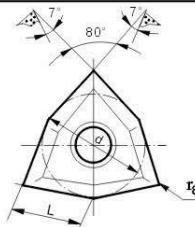


Type	Dimension (mm)					Grade
	L	d	S	d ₁	r _e	
WNMG060408-ZM	6.5	9.525	4.76	3.81	0.8	ZC302 ZC312 ZC304 ZC314 ZP10 ZP20 ZP25 ZP35 ZP40 ZM15 ZM30 ZK10UF ZK20 ZK20UF ZK30 ZK30UF
WNMG080408-ZM	8.68	12.70	4.76	5.16	0.8	
WNMG080412-ZM					1.2	

W

WNMG-V

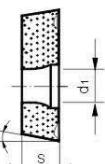
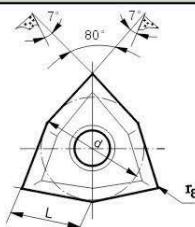
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
WNMG060404-V2	6.5	9.525	4.76	3.81	0.4	●	●														
WNMG080404-V2	8.68	12.70	4.76	5.16	0.4	●	●														
WNMG080408-V2					0.8	●															

WCMT-V

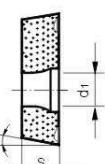
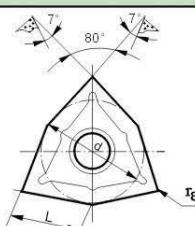
Semi-finishing



Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
WCMT050308-V1	4.4	7.94	3.18	3.40	0.8	●	●	●	●	●	●	●	●	●							
WCMT06T308-V1	6.5	9.525	3.97	4.40	0.8	●	●	●	●	●	●	●	●	●							
WCMT080408-V2	8.68	12.70	4.76	5.16	0.8	●	●	●	●	●	●	●	●	●							

WCMT-ZF3

Finishing

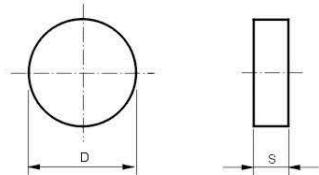


Type	Dimension (mm)					Grade															
	L	d	S	d ₁	r _e	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF
WCMT050304-ZF3	5.4	7.94	3.18	3.40	0.4	●	●			●											
WCMT06T304-ZF3	6.5	9.525	3.97	4.40	0.4	●	●			●											

W

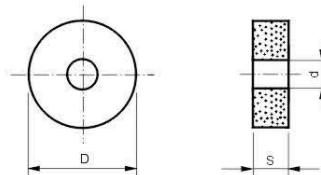
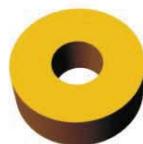
RNMN

Semi-finishing



Type	Dimension (mm)		Grade
	D	S	
RNMMN090300	9.525	3.18	ZC302
RNMMN120400	12.70	4.76	ZC312
RNMMN160400	16.00	4.76	ZC304
RNMMN160500		5.56	
RNMMN190300	19.05	3.18	ZC314
RNMMN200600	20.00	6.35	ZP10
			ZP20
			ZP25
			ZP35
			ZP40
			ZM15
			ZM30
			ZK10UF
			ZK20
			ZK20UF
			ZK30
			ZK30UF

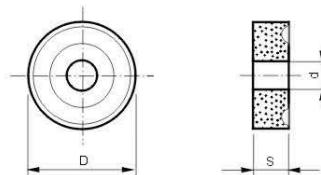
RNMA



Type	Dimension (mm)			Grade
	D	S	d	
RNMA100300	10.00	3.18	3.81	ZC302
RNMA120400	12.00	4.76	5.16	ZC312
RNMA160500	16.00	5.58	6.35	ZC304
RNMA200600	20.00	6.35	7.93	ZC314
				ZP10
				ZP20
				ZP25
				ZP35
				ZP40
				ZM15
				ZM30
				ZK10UF
				ZK20
				ZK20UF
				ZK30
				ZK30UF

RNMM-V

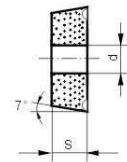
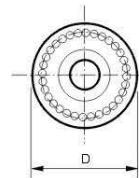
Semi-finishing



Type	Dimension (mm)			Grade
	D	S	d	
RNMM120400-V2	12.00	4.76	5.16	ZC302
RNMM160500-V3	10.00	5.58	6.35	ZC312
RNMM160600-V2	16.00	3.18	6.35	ZC304
RNMM200600-V4	20.00	6.35	7.93	ZC314
				ZP10
				ZP20
				ZP25
				ZP35
				ZP40
				ZM15
				ZM30
				ZK10UF
				ZK20
				ZK20UF
				ZK30
				ZK30UF

RCMM-ZR51

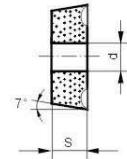
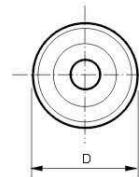
Roughing



Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
RCMM160500-ZR51	16.00	5.56	6.35	•			•			•	•	•						

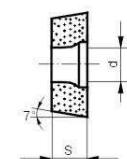
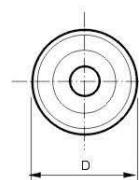
RCMM-V

Roughing



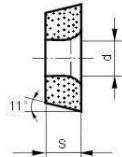
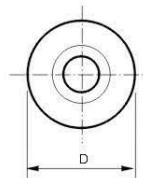
Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
RCMM281000-V3	28.00	10.00	12.00	•	•	•	•	•	•	•	•	•						
RCMM321000-V3	32.00	10.00	12.00	•	•	•	•	•	•	•	•	•						

RCUT



Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
RCUT080300	8.00	3.18	3.40	•	•	•	•	•	•	•	•	•			•			
RCUT10T300	10.00	3.97	4.40	•	•	•	•	•	•	•	•	•			•			

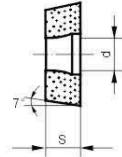
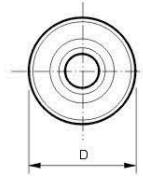
RPMW



Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
RPMW100300	10.00	3.18	4.40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

RCMT-V

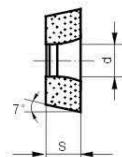
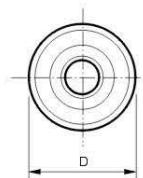
Roughing-semi-finishing



Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
RCMT060200-V0	6.00	2.38	2.80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
RCMT080300-V1	8.00	3.18	3.40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
RCMT10T300-V1	10.00	3.97	4.40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
RCMT120400-V2	12.00	4.76	4.40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
RCMT160500-V3	16.00	3.18	6.35	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

RCMX-ZV

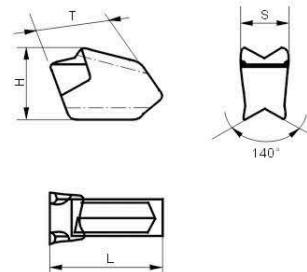
Roughing-semi-finishing



Type	Dimension (mm)			Grade														
	D	S	d	ZC302	ZC312	ZC304	ZC314	ZP10	ZP20	ZP25	ZP35	ZP40	ZM15	ZM30	ZK10UF	ZK20	ZK20UF	ZK30
*RCMX100300-ZV1	10.00	3.18	3.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
*RCMX120400-ZV1	12.00	4.76	4.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
*RCMX160600-ZV2	16.00	6.36	5.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

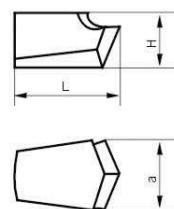
* Special chipbreaker

QC14



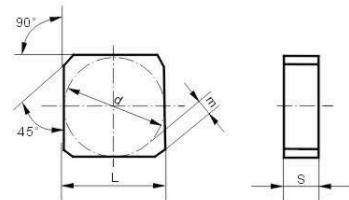
Type	Dimension (mm)				Grade			
	L	T	H	S	ZP20	ZP25	ZP35	ZJ30
QC1403	14.00	10.85	7.40	3.00	•	•	•	
QC1404	14.00	10.85	7.40	4.00	•	•	•	•
QC1405	13.85	11.00	7.80	5.00	•	•	•	•
QC1406	13.70	11.00	8.45	6.40	•	•	•	•
QC1408	18.00	14.00	11.60	8.00	•	•	•	•
QC14T3	14.00	10.80	7.40	3.50	•	•	•	•

QC07



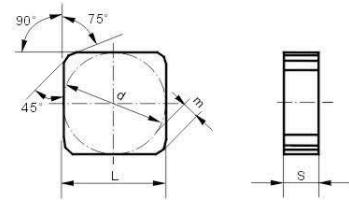
Type	Dimension (mm)			Grade				
	L	H	α	ZP35	ZJ30			
QC0707	7.85	7.20	7.50	•	•			

SNA(C/K)N-ANN



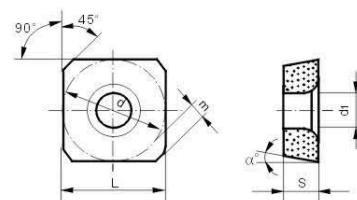
Type	Dimension (mm)			Grade									
	L=d	S	m	ZC302	ZC304	ZP20	ZP25	ZK10UF	ZK20	ZK30	ZK30UF	YT798	YT535
SNA(C/K)N1204ANN	12.70	4.76	1.63	•	•	•	•	•	•	•	•	•	•
SNA(C/K)N1504ANN	15.875	4.76	2.04	•	•	•	•	•	•	•	•	•	•
SNA(C/K)N1904ANN	19.05	4.76	2.45	•	•	•	•	•	•	•	•	•	•

SNA(C/K)N-ENN



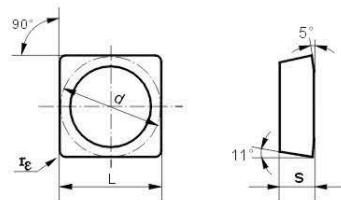
Type	Dimension (mm)			Grade										
	L=d	S	m	ZC302	ZC304	ZP20	ZP25	ZK10UF	ZK20	ZK30	ZK30UF	YT798	YT535	YT26
SNA(C/K)N1204ENN	12.70	4.76	0.80	•	•	•	•	•	•	•	•	•	•	•
SNA(C/K)N1504ENN	15.875	4.76	1.50	•	•	•	•	•	•	•	•	•	•	•
SNA(C/K)N1904ENN	19.05	4.76	1.324	•	•	•	•	•	•	•	•	•	•	•

SPMW-ANN



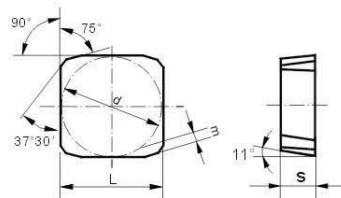
Type	Dimension (mm)				Grade									
	L=d	S	m	α °	ZC302	ZC304	ZP20	ZP25	ZK10UF	ZK20	ZK30	ZK30UF	YT798	YT26
SPMW1204ANN	12.70	4.76	1.63	11° 20°	•	•	•	•	•	•	•	•	•	•
SPMW1204ANN	15.875	4.76	2.04	11°	•	•	•	•	•	•	•	•	•	•
SPMW1504ANN	19.05	4.76	2.45		•	•	•	•	•	•	•	•	•	•

SPFN-T



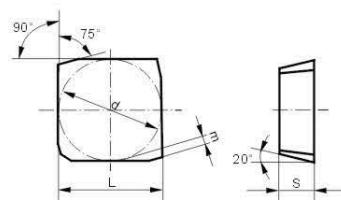
Type	Dimension (mm)			Grade											
	L=d	S	r _e	ZC302	ZC304	ZP20	ZP25	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF	YT798	YT535	YT26
SPFN120308T	12.70	3.18	0.8	•	•	•	•	•	•	•	•	•	•	•	•
SPFN120312T			1.2												
SPFN120320T			2.0												
SPFN150412T	15.875	4.76	1.2	•	•	•	•	•	•	•	•	•	•	•	•
SPFN150416T			1.6												
SPFN150420T			2.0												
SPFN190424T	19.05	4.76	2.4	•	•	•	•	•	•	•	•	•	•	•	•

SPA(C/K)N-EDR/(L)



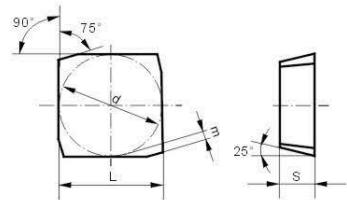
Type	Dimension (mm)			Grade											
	L=d	S	m	ZC302	ZC304	ZP20	ZP25	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF	YT798	YT535	YG813
SPA(C/K)N1203EDR	12.70	3.175	0.90	•	•	•	•	•	•	•	•	•	•	•	•
SPA(C/K)N1203EDL															
SPA(C/K)N1504EDR	15.875	4.76	1.25	•	•	•	•	•	•	•	•	•	•	•	•
SPA(C/K)N1504EDL															
SPAN1904EDR	19.05	4.76	1.308	•	•	•	•	•	•	•	•	•	•	•	•
SPAN1904EDL															

SECN-EER(L)



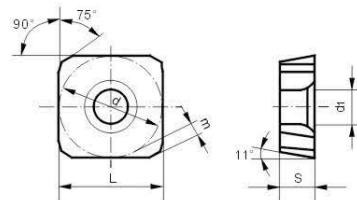
Type	Dimension (mm)			Grade										
	L=d	S	m	ZP20	ZK10UF	ZK20UF	ZK20UF	ZK20UF	YT798	YG813				
SECN1203EER(L)	12.70	3.175	0.80	•	•	•	•	•	•	•	•	•	•	•
SECN1504EER(L)	15.875	4.76	1.034	•	•	•	•	•	•	•	•	•	•	•

SFAN-EER(L)



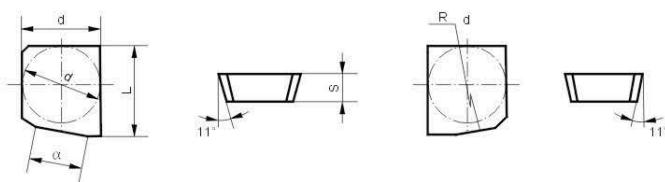
Type	Dimension (mm)			Grade									
	L=d	S	m	ZP20	ZK20UF	ZK20UF	ZK20UF	ZK20UF	ZK30	ZK30UF	YT798	YT535	YG813
SFAN1203EER(L)	12.70		0.80	•	•	•	•	•	•	•	•	•	•
SFAN1504EER(L)	15.875		1.034	•	•	•	•	•	•	•	•	•	•

SPMW-EDR(L)



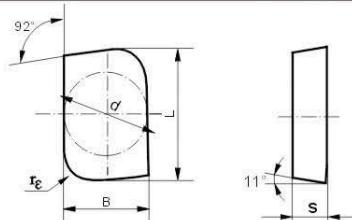
Type	Dimension (mm)			Grade									
	d	S	m	ZP20	ZP25	ZK20UF	ZK20	ZK20UF	ZK30	ZK30UF	YT798	YT535	YG813
SPMW1204EDR(L)	12.70	4.76	0.90	•	•	•	•	•	•	•	•	•	•
SPMW1504EDR(L)	15.875	4.76	1.25	•	•	•	•	•	•	•	•	•	•

LPEX-EDR(L)



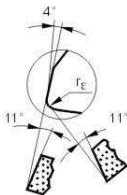
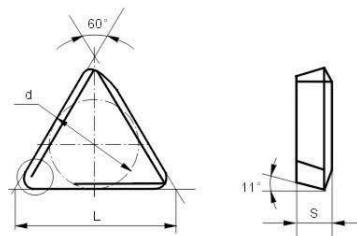
Type	Dimension (mm)				Grade								
	L	d	S	m	ZP20	ZK25	ZK20UF	ZK20UF	ZK20UF	ZK30	ZK30UF	YT798	YT813
LPEX1403EDR-1 LPEX1403EDL-1	14.70	12.70	3.18	8	•	•	•	•	•	•	•	•	•
LPEX1404EDR-1 LPEX1404EDL-1	14.70	12.70	4.76	8	•	•	•	•	•	•	•	•	•
LPEX1804EDR-1 LPEX1804EDL-1	18.20	15.875	4.76	10	•	•	•	•	•	•	•	•	•

LPEN



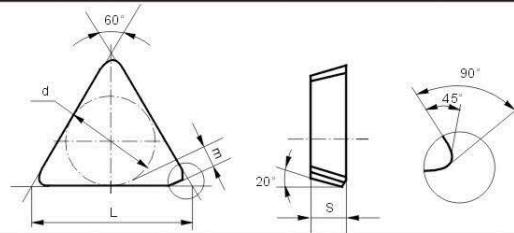
Type	Dimension (mm)				Grade								
	L	B=d	S	r _e	ZCK23	ZP20	ZP25	ZK10UF	ZK20	ZK20UF	ZK30	ZK30UF	YT335
LPEN2505R(L)	25.40	14.28	5.50	3.5	●	●	●	●	●	●	●	●	●

FPCN



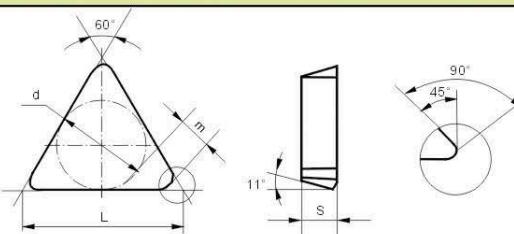
Type	Dimension (mm)				Grade								
	L=d	d	S	r _e	ZP20	ZK10UF	ZK20	ZK30	YT26	YT98			
FPCN110305R(L)	11.0	6.35	3.175	0.5	●	●	●	●	●	●			
FPCN110310R(L)				1.0	●	●	●	●	●	●			
FPCN160305R(L)				0.5	●	●	●	●	●	●			
FPCN160310R(L)				1.0	●	●	●	●	●	●			
FPCN160315R(L)				1.5	●	●	●	●	●	●			
FPCN160320R(L)				2.0	●	●	●	●	●	●			
FPCN220405R(L)				0.5	●	●	●	●	●	●			
FPCN220410R(L)				1.0	●	●	●	●	●	●			
FPCN220415R(L)				1.5	●	●	●	●	●	●			
FPCN220420R(L)				2.0	●	●	●	●	●	●			
FPCN220425R(L)				2.5	●	●	●	●	●	●			
FPCN270605R(L)				0.5	●	●	●	●	●	●			
FPCN270610R(L)				1.0	●	●	●	●	●	●			
FPCN270620R(L)				2.0	●	●	●	●	●	●			
FPCN270630R(L)				3.0	●	●	●	●	●	●			

TEC(K)N-PER(L)



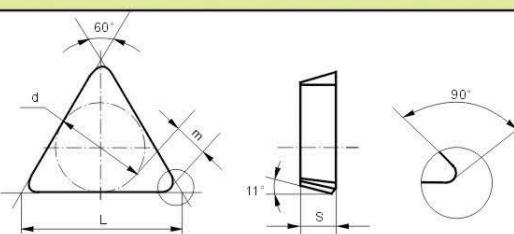
Type	Dimension (mm)				Grade							
	L=d	d	S	m	ZP20	ZP25	ZK10UF	ZK20	ZK20UF	ZK30UF	ZK30UF	YT78
TECN1603PER	16.5	9.525	3.175	2.19	•	•	•	•	•	•	•	•
TECN1603PEL												
TEKN1603PER												
TEKN1603PEL												

TPA(C/K)N-PDR(L)



Type	Dimension (mm)				Grade							
	L	d	S	m	ZP20	ZK10UF	ZK20UF	ZK30	ZK30UF	YT78		
TPACN1603PDR	16.5	6.525	3.175	2.45	•	•	•	•	•	•		
TPAKN1603PDL												
TPACN2204PDR	22.0	12.70	4.76	3.55	•	•	•	•	•	•		
TPAKN2204PDL												

TPA(C/K)N-PPN



Type	Dimension (mm)				Grade							
	L	d	S	m	ZP20	ZP25	ZK10UF	ZK20	ZK30	ZK30UF	YT78	YG813
TPAN1103PPN	11.0	6.35	3.175	1.72	•	•	•	•	•	•	•	
TPCN1103PPN												
TPKN1103PPN												
TPAN1603PPN	16.5	9.525	3.175	2.45	•	•	•	•	•	•	•	
TPCN1603PPN												
TPKN1603PPN												
TPAN2204PPN	22.0	12.70	4.76	3.55	•	•	•	•	•	•	•	
TPCN2204PPN												
TPKN2204PPN												