

# NC Cutting Inserts

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CNGA	CNGA-2T	CNMG	CNMG-AL	CNGW	CNMG-2T	CNMG-HA	CNMG-TS	CNMG-PF	CNMG-MSF	CNMG-MF	CNMG-HQ
A01	A01	A01	A01	A01	A01	A01	A01	A01	A01	A01	A01
CBN	CBN	PCD	PCD	PCD	PCD						
CNMG-PM	CNMG-MA	CNMG-MM	CNMG-MT	CNMG-HS	CNMG-TM	CNMG-GM	CNMG-MK	CNMG-MS	CNMG-R-X	CNMG-L-X	CNMG-43
A02	A02	A02	A02	A02	A02	A02	A02	A02	A02	A02	A02
CNMA	CNMG-PR	CNMM-PR	DNGA	DNGA-2T	DNMG	DNMG-AL	DNGW	DNMG-2T	DNMG-HA	DNMG-PF	DNMG-MSF
A02	A02	A02	A03	A03	A03	A03	A03	A03	A03	A03	A03
			CBN	CBN	PCD	PCD	PCD	PCD			
DNMG-MF	DNMG-FG	DNMG-MK	DNMG-PM	DNMG-MM	DNMG-TM	DNMG-HQ	DNMG-R-VF	DNMG-L-VF	DNMG-R-S	DNMG-L-S	DNMG-MS
A03	A03	A03	A04	A04	A04	A04	A04	A04	A04	A04	A04
DNMG-43	DNMA	DNMG-PR	KNUX-R	KNUX-L	RNMG-MO	175.32	SNGA	SNGA-4T	SNMG	SNMG-AL	SNGW
A04	A04	A04	A05	A05	A06	A06	A07	A07	A07	A07	A07
							CBN	CBN	PCD	PCD	PCD
SNMG-4T	SNMG-HA	SNMG-PF	SNMG-MF	SNMG-PM	SNMG-HS	SNMG-TM	SNMG-GM	SNMG-R-S	SNMG-L-S	SNMG-MA	SNMG-MM
A07	A07	A07	A07	A07	A08	A08	A08	A08	A08	A08	A08
PCD											
SNMG-MT	SNMG-HQ	SNMG-MK	SNMG-MS	SNMA	SNMG-PR	SNMM-PR	TNGA	TNGA-3T	TNMG	TNMG-AL	TNGW
A08	A08	A08	A08	A08	A08	A08	A09	A09	A09	A09	A09
							CBN	CBN	PCD	PCD	PCD
TNMG-3T	TNMG-HA	TNMG-R-S	TNMG-L-S	TNMG-R-P	TNMG-L-P	TNMG-TS	TNMG-PF	TNMG-MSF	TNMG-MF	TNMG-PM	TNMG-MM
A09	A09	A09	A09	A09	A09	A09	A09	A09	A10	A10	A10
PCD											
TNMG-MA	TNMG-CQ	TNMG-MT	TNMG-HQ	TNMG-MQ	TNMG-HS	TNMG-TM	TNMG-MK	TNMG-GM	TNMG-43	TNMG-R-S	TNMG-L-S
A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10
TNMG-R-VF	TNMG-L-VF	TNMG-MS	TNMA	TNMG-PR	TNMM-PR	VNGA	VNGA-2T	VNMG	VNMG-AL	VNGW	VNMG-2T
A10	A10	A10	A10	A10	A10	A11	A11	A11	A11	A11	A11
						CBN	CBN	PCD	PCD	PCD	PCD
VNMG-HA	VNMG-PF	VNMG-MSF	VNMG-MF	VNMG-PM	VNMG-MA	VNMG-MM	VNMG-MT	VNMG-HQ	VNMG-HS	VNMG-TM	VNMG-GM
A11	A11	A11	A11	A11	A12	A12	A12	A12	A12	A12	A12
VNMG-MS	VNMA	VNMG-PR	VNGA	VNGA-3T	VNMG	VNMG-AL	VNGW	VNMG-3T	VNMG-HA	VNMG-TS	VNMG-PF
A12	A12	A12	A13	A13	A13	A13	A13	A13	A13	A13	A13
			CBN	CBN	PCD	PCD	PCD	PCD			

WNMG-MSF	WNMG-MF	WNMG-HQ	WNMG-PM	WNMG-MQ	WNMG-MA	WNMG-MK	WNMG-MM	WNMG-MT	WNMG-HS	WNMG-TM	WNMG-GM	
A13	A13	A13	A14	A14	A14	A14	A14	A14	A14	A14	A14	
WNMG-CQ	WNMG-PC	WNMG-CM	WNMG-MS	WNMG-43	WNMG-R-S	WNMG-L-S	WNMA	WNMG-PR	CCGT	CCGT-2T	CCGT	
A14	A14	A14	A14	A14	A14	A14	A14	A14	A15	A15	A15	
									CBN	CBN	PCD	
CCGT-AL	CCGW	CCGT-2T	CCGT-AL	CCGT-R	CCGT-L	CCGT-ER-U	CCGT-EL-U	CCGT-R-H	CCGT-L-H	CCMT-TF	CCMT-TF	
A15	A15	A15	A15	A15	A15	A15	A15	A15	A15	A16	A16	
PCD	PCD	PCD										
CCMT-TF	CCMT-TF	CCMT-TF	CCMT-TF	CCMT-TF	CCMT-TF	CCMT-TF	CCMT-TF	DCGT	DCGT-2T	DCGT	DCGT-AL	DCGW
A16	A16	A16	A16	A16	A16	A16	A16	A17	A17	A17	A17	A17
								CBN	CBN	PCD	PCD	PCD
DCGT-2T	DCGT-AL	DCGT-R	DCGT-L	DCGT-ER-U	DCGT-EL-U	DCGT-R-H	DCGT-L-H	DCMT-TF	DCMT-FG	DCMT-TM	DCMT-MT	
A17	A17	A17	A17	A17	A17	A17	A17	A18	A18	A18	A18	
PCD												
DCMT-GM	DCMT-HQ	DCMT	DCMT-MV	DCMT-TR	WBGT	WBGT	WBGT-R	WBGT-L	RCGT-AL	RCMT-MO	SCGT	
A18	A18	A18	A18	A18	A19	A19	A19	A19	A19	A19	A20	
					CBN	PCD					CBN	
SCGT	SCGW	SCGT-AL	SCMT-TF	SCMT-MT	SCMT-TM	SCMT-GM	SCMT-HQ	SCMT-TR	TCGT	TCGT-3T	TCGW	
A20	A20	A20	A20	A20	A20	A20	A20	A20	A21	A21	A21	
PCD	PCD								CBN	CBN	PCD	
TCGT-3T	TCGT-AL	TPGT-L	TPGT-R	TCMT-TF	TCMT-FG	TCMT-TM	TCMT-GM	TCMT	TCMT-MV	TCMT-HQ	TCMT-MT	
A21	A21	A21	A21	A22	A22	A22	A22	A22	A22	A22	A22	
PCD												
TCMT-TR	VBGT	VBGT-2T	VBGW	VBGT-AL	VBGT	VBGT-AL	VBGT-R-F	VBGT-L-F	VBGT-R-Y	VBGT-L-Y	VBGT-R-H	
A22	A23	A23	A23	A23	A23	A23	A24	A24	A24	A24	A24	
	CBN	CBN	PCD	PCD	PCD							
VBGT-L-H	VBMT-TF	VBMT-HQ	VBMT-MT	VBMT-MV	VBMT-TM	VBMT-GM	VBMT-TR					
A24	A24	A24	A24	A24	A24	A24	A24					

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Grooving /Cut-off Machining

TGF32R A25	TGF32R..R. A25	TGF32L A25	TGF32L..R.. A25	GBA43R A26	GBA43R..R.. A26	GBA43L A26	GBA43L..R.. A26	T..E.. A27	T..N.. A27	T..N..DM.. A27	T..N..DM..R.. A27
CTP A30	CTPA A31	CTPW A32	TKF A33								
FGD A35	FGM A35	FMM A35	MFMN A35	MGMN-G A35	MGMN-M A35	MGMN-T A35	MGMN-H A35	MGMR-PS A35	MGML-PS A35	MGMN-R.. A35	MGMN-L.. A35
MGMN A36	MRGN-A A36	MRGN-M A36	MRMN A36	MVGN A36	MGGN A36	MGGN-R.. A36	MGGN-L.. A36	SP.. A36	A4G.. A37	A4R.. A37	DGN-C A37
PCD/CBN			CBN/PCD								
DGN-J A37	PENTA24N A37	GCMN-MG A38	GCMN-RG A38	GMM-MT A38	GMM-R-MT A38	GMM-R-TK A38	GMM-L-MT A38	GMM-L-TK A38	GMM-MW A38	GMM-R A38	GY2M-MM A39
GY2M-BM A39	N123-CM A39	N123-TM A39	N123-RM A39	TDC A40	TDJ A40	TDC-R A40	TSC A40	TDT A40	TDC-L A40	WGE A40	WGR A40
WGE-R A40	WGE-L A40	ZTED A41	ZRED A41	ZQMX A41	ZR.. A41						
GER-A A47	GER-AR A47	GER-B A47	GER-BR A47	GER-C A47	GER-CR A47	GER-D A48	GER-DR A47	GER-E A48	GER-ER A48	GER-DM A48	GER-DM-R A48
7GR.. A49	8/9GR.. A49										

Back Turning Machining

TBP A43	TKFB A44	TB32.. A45	ABS15R.. A46	ABW15R.. A46	ABW23R.. A46
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Thread Machining

ISO.. A51 60°	ISO.. A51 60°	CBN/PCD A51 60°	U.. A51 60°	TTX32R.. A52 60°	TKFT.. A52 60°	W.. A53 55	W.. A53 55	CBN/PCD A53 55	TTX32R.. A54 55	TKFT.. A54 55	UN A55 60°
UNJ	PG	BSPT	RND	NPT	NPTF	ACME	V ACME	STUB ACME	TR 30°	U TR	V TR
A56 60°	A56 80° DIN40430	A57 55°	A57 DIN405	A58 60°	A58 60°	A59 29°	A59 29°	A59 29° ACME	A60 30° DIN103	A60 30° DIN103	A60 30° DIN103
ABUT	BBUT	SAGE	U SAGE	V SAGE	API	API RD	API RD	BUT	BU	EL	
A61 45°*7°	A61 45°*7°	A62 30°*3°	A62 30°*3°	A62 30°*3°	A63 60°	A63 60°	A63 60°	A64 10°*3°	A64 10°*3°	A64 6°*6°	

Milling / Drilling Machining

WNMU04 A65	WNMU08 A65	6NGU A65	3PKT..R-M A65	3PKT..R-ML A65	3PKT..R-AL A65	JDMT A65	EDMT A65	APKT1003 A65	APKT-G2 A66	APKT-AL A66	APKT-PCD A66
High Feed Cutting	High Feed Cutting	High Feed Cutting	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling
APKT-CBN A66	APMT-M2 A66	APMT-H.. A66	APMT-DU A66	APMT-KZ A66	APMT-ZM A66	R390-PM A66	RT A67	XOMX A67	AOMT A67	SEET A67	APET A67
Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling
AXMT A67	AXCT A67	TPKN A67	TPMR A67	RPGT-AL A68	RPEW-MO A68	RPKT-MOF A68	RPKT-MOT A68	RPMT-MOE-JS A68	RPMT-DU A68	RPMT-MO-GH A68	RCGT-AL A68
Right Angle Milling	Right Angle Milling	Right Angle Milling	Right Angle Milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling
RCKT-MO-PM A68	RCKT-MO-PR A68	RCMT-MO A69	RCMX-MO A69	RDKW-MO A69	RDKX-MO A69	RDKX-MP-1 A69	RDMW-MOT-PV A69	RDMT-MO A69	RNGJ A69	ZC.. A69	SWB A70
Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Round nose milling	Ball milling	Ball milling
ZPFG A70	ZCFW A70	BNM A70	P3200 A70	ADMT A71	APMT A71	CCMT A71	CPMT A71	TCMX A71	SDMB A71	LPMT A71	SPMT A71
Ball milling	Ball milling	Ball milling	Ball milling	Drilling + Milling	Drilling + Milling	Drilling + Milling	Drilling + Milling	Positioning Chamfering	Chamfering	Corn type rough milling	Corn type rough milling
MPHT A71	XSEQ A72	JOMW/JDMT A72	EPNW A72	SDMT A72	WDMW A73	WPGT A73	HNGX A73	BLMP06.. A73	BLMP12.. A73	LNMU A73	SEMT13T3.. A73
Three side edge milling	Three side edge milling	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	High Feed Cutting	Face milling
SEET12T3.. A73	SECA A73	SEKT1204.. A73	SEHT1204.. A74	SEHT-AK A74	SEHT-PCD A74	SEHT-CBN A74	SEKN A74	SEKR A74	WCMX-SU A75	WCMX-ZK A75	WCMX A75
Face milling	Face milling	Face milling	Face milling	Face milling	Face milling	Face milling	Face milling	Face milling	Fast drilling	Fast drilling	Fast drilling
SPMG-TT A75	SPMG-PM A75	SOMT A75	XOMT-PD A75	SPMT-PD A75	WDXT-L A76	WDXT-G A76	WDXT-H A76	GPMT A76	880-LM A76	880-GM A76	880-GR A76
Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling	Fast drilling

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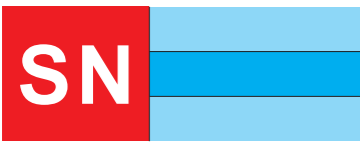






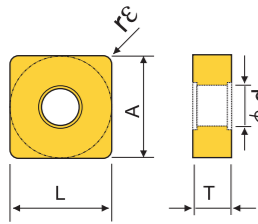






(External Toolholder): B09-B10  
(Internal Toolholder): B40

(Cutting Speed): m/min<sup>1</sup>



Model	A	T	φd
SN..0903..	9.525	3.18	3.81
SN..1204..	12.70	4.76	5.16
SN..1506..	15.875	6.35	6.35
SN..1906..	19.05	6.35	7.94
SN..2507..	25.4	7.94	9.12
SN..2509..	25.4	9.525	9.12

Model	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
M				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
K										50-150	70-150	50-200		
N													200-300	200-350
S													150-200	150-250
H														

Application	Material	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✘
M	Stainless Steel	●	●	✘
K	Iron	●	●	✘
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✘
S	Carbide/Powder Metallurgy	●	●	✘
H	Titanium/Superalloy/Carbon Fiber	●	●	✘

Application	Material	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✘
M	Stainless Steel	●	●	✘
K	Iron	●	●	✘
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✘
S	Carbide/Powder Metallurgy	●	●	✘
H	Titanium/Superalloy/Carbon Fiber	●	●	✘

Application	Cutting Parameter	Product Image	Specification	L	T	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S	
General Purpose			SNMA 120402 120404 120408 120412	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMA 120402-4T 120404-4T 120408-4T 120412-4T	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120402 120404 120408 120412	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120402-AL 120404-AL 120408-AL 120412-AL	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120402-4T 120404-4T 120408-4T 120412-4T	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120402-4T 120404-4T 120408-4T 120412-4T	12.7	0.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●

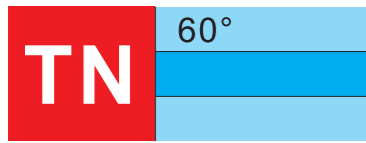
Application	Cutting Parameter	Product Image	Specification	L	T	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S	
General Purpose			SNMG 120404-HA 120408-HA 120412-HA	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 090304-PF 090308-PF 120404-PF 120408-PF 120412-PF	9.1	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 090304-MF 090308-MF 090312-MF 120404-MF 120408-MF 120412-MF 150608-MF 150612-MF	9.1	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 090304-PM 090308-PM 090312-PM 120404-PM 120408-PM 120412-PM 150608-PM 150612-PM 190608-PM 190612-PM 190616-PM	9.1	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Application	Cutting Parameter	Product Image	Specification	L	T	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S	
General Purpose			SNMG 120404-HS 120408-HS 120412-HS	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-TM 120408-TM 120412-TM	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-GM 120408-GM 120412-GM	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-R-S 120408-R-S 120412-R-S	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-L-S 120408-L-S 120412-L-S	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-MA 120408-MA 120412-MA	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-MM 120408-MM 120412-MM 150608-MM 150612-MM 150616-MM	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-MT 120408-MT 120412-MT	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120404-HQ 120408-HQ 120412-HQ	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Application	Cutting Parameter	Product Image	Specification	L	T	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S	
General Purpose			SNMG 120404-MK 120408-MK 120412-MK	12.3	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 090304-MS 090308-MS 120404-MS 120408-MS 120412-MS 120416-MS 150608-MS 150612-MS 150616-MS 190608-MS 190612-MS 190616-MS 190624-MS 250924-MS	9.1	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMA 090304 090308 120404 120408 120412 120416 150608 150612 150616 190608 190612 190616 190624 250924	9.1	0.4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMG 120408-PR 120412-PR 120416-PR 150608-PR 150612-PR 150616-PR 190612-PR 190616-PR 190624-PR	11.9	0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●
General Purpose			SNMM 120408-PR 120412-PR 120416-PR 150608-PR 150612-PR 150616-PR 190612-PR 190616-PR 190624-PR	11.9	0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●

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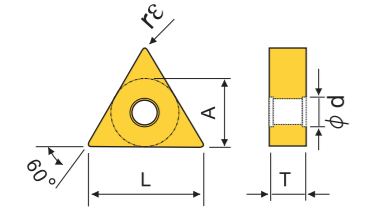


(External Toolholder): B11-B14  
(Small Parts Toolholder): AB04/AB12  
(Internal Toolholder): B37-B39

Model	A	T	φd
TN..1103..	6.35	3.18	2.40
TN..1603..	9.525	3.18	3.81
TN..1604..	9.525	4.76	3.81
TN..2204..	12.7	4.76	5.16
TN..2706..	15.875	6.35	6.35
TN..3307..	19.05	7.94	7.93
TN..3309..	19.05	9.52	7.93

(Cutting Speed): m/min<sup>1</sup>

Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P				150-600	150-800		70-500	150-500	150-800	70-250	100-250	80-300		
M				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
K										20-60	20-60	20-80		
N										50-150	70-150	50-200		
S													200-300	200-350
H													150-200	150-250



Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
K																	
N																	
S																	
H																	

Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
K																	
N																	
S																	
H																	

Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
K																	
N																	
S																	
H																	

Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
K																	
N																	
S																	
H																	

Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
K																	
N																	
S																	
H																	

Application	Cutting Parameter	Product Image	Specification	L	T	φd	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P																	
M																	
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TGF  
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T.N/E

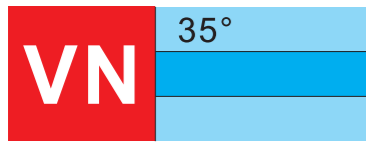
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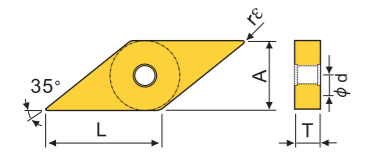


(External Toolholder): B15-B16  
(Internal Toolholder): B42-B43

Model	A	T	φd
VN..1604..	9.525	4.76	3.81
VN..2204..	12.7	4.73	5.16

(Cutting Speed): m/min<sup>1</sup>

Model	Cutter Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
P	HRC46-58			10-30	150-600 150-350	150-800 150-500		70-500 70-250	150-500 80-350	150-800 100-400	70-250 70-150	100-250 80-150	100-300 60-200		
M					200-300	200-350					50-150	70-150	50-200		
K			300-1500	400-800	100-300	100-350								200-300	200-350
N		300-1200			100-200	100-250								150-200	150-250
S							300-1200								
H							300-1500								



Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
Review			VNMA 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMA 160402-2T 160404-2T 160408-2T 160412-2T	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 120402-AL 120404-AL 120408-AL 120412-AL	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNGW 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160402-2T 160404-2T 160408-2T 160412-2T	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●

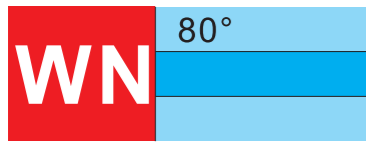
Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
Review			VNMG 160404-HA 160408-HA 160412-HA	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-PF 160408-PF	15.6 14.6	0.4 0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-MSF 160408-MSF	15.6 14.6	0.4 0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-MF 160408-MF	15.6 14.6	0.4 0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-PM 160408-PM 160412-PM	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
Review			VNMG 160404-MA 160408-MA 160412-MA	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-MM 160408-MM	15.6 14.6	0.4 0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-MT 160408-MT 160412-MT	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-HQ 160408-HQ 160412-HQ	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-HS 160408-HS 160412-HS	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-TM 160408-TM 160412-TM	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-GM 160408-GM 160412-GM	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160404-MS 160408-MS 160412-MS	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

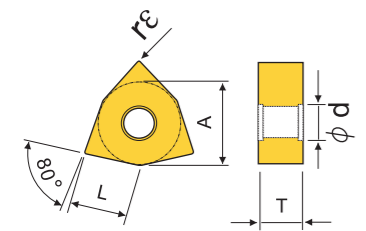
Application	Cutting Parameter	Product Image	Specification	边长 L	刀尖 φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
Review			VNMA 160404 160408 160412	15.6 14.6 13.6	0.4 0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Review			VNMG 160408-PR 160412-PR	14.6 13.6	0.8 1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●



(External Toolholder): B17-B18  
(Internal Toolholder): B44

Model	A	T	φd
WN..0603..	9.525	3.18	3.81
WN..0604..	9.525	4.76	3.81
WN..0804..	12.7	4.76	5.16

(Cutting Speed): m/min<sup>1</sup>



Model	Cutter Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
P	High-Speed Steel				150-600	150-800		70-500	150-500	150-800	70-250	100-250	80-300		
M	HRC46-58			10-30	150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
K	Grey Cast Iron		300-1500		100-300	100-350					20-60	20-60	20-80		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood		400-800		100-200	100-250					50-150	70-150	50-200		
S	Carbide/Powder Metallurgy													200-300	200-350
H	Titanium/Superalloy/Carbon Fiber													150-200	150-250

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNGA 080402 080404 080408 080412	8.7	0.2		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNGA 080402-3T 080404-3T 080408-3T 080412-3T	8.7	0.2		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080402 080404 080408 080412	8.7	0.2		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080402-AL 080404-AL 080408-AL 080412-AL	8.7	0.2		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNGW 080402 080404 080408 080412	8.7	0.2		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080402-3T 080404-3T 080408-3T 080412-3T	8.7	0.2		●	●											

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-HA 080408-HA 080412-HA	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-TS 080408-TS 080412-TS	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 060404-PF 060408-PF 080404-PF 080408-PF	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 060304-MSF 060404-MSF 080404-MSF 080408-MSF	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 060404-MF 060408-MF 080404-MF 080408-MF	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-HQ 080408-HQ 080412-HQ	8.4	0.4		●	●											

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 060404-PM 060408-PM 080404-PM 080408-PM 080412-PM	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-MQ 080408-MQ 080412-MQ	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-MA 080408-MA 080412-MA	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-MK 080408-MK 080412-MK	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 060404-MM 060408-MM 080404-MM 080408-MM 080412-MM	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-MT 080408-MT 080412-MT	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-HS 080408-HS 080412-HS	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-TM 080408-TM 080412-TM	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-GM 080408-GM 080412-GM	12.4	0.4		●	●											

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-CQ 080408-CQ 080412-CQ	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-PC 080408-PC 080412-PC	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-CM 080408-CM 080412-CM	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-MS 080408-MS 080412-MS	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-43 080408-43 080412-43	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-R-S 080408-R-S 080412-R-S	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404L-S 080408L-S 080412L-S	8.4	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMA 060404 060408 060412 080404 080408 080412 080416	6.2	0.4		●	●											
General Purpose	Graph showing cutting speed vs feed rate for various materials.		WNMG 080404-PR 080412-PR 080416-PR	8.3	0.8		●	●											

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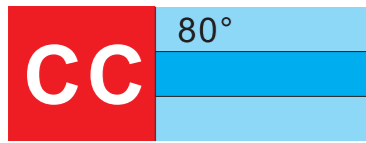
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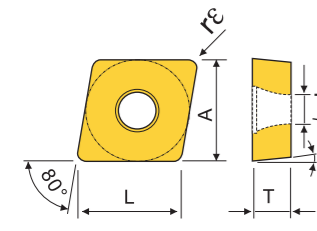


(External Toolholder): B19-B20  
(Small Parts Toolholder): AB03/AB11  
(Internal Toolholder): B45-B48

Model	A	T	φd	a
CC..0301..	3.5	1.39	1.9	7°
CC..0401..	4.3	1.79	2.3	7°
CC..0602..	6.35	2.38	2.8	7°
CC..09T3..	9.525	3.97	4.4	7°
CC..1204..	12.7	4.76	5.5	7°

(Cutting Speed): m/min<sup>1</sup>

加工材料 Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
P HRC46-58			10-30	150-600 150-350	150-800 150-500		70-500 70-250	150-500 80-350	150-600 100-400	70-250 70-150	100-250 80-150	80-300 60-200		
M				200-300	200-350					20-60	20-60	20-80		
K		300-1500	400-800	100-300	100-350					50-150	70-150	50-200	200-300	200-350
N	300-1200	300-1500	300-800	300-1000	300-1200	300-1500							150-200	150-250
S	10-30									20-50				
H	100-200									20-50	20-60	30-80		



Application	Material	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●		
M	Stainless Steel		●	
K	Iron		●	
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood		●	
S	Carbide/Powder Metallurgy		●	
H	Titanium/Superalloy/Carbon Fiber		●	

Application	Material	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●		
M	Stainless Steel		●	
K	Iron		●	
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood		●	
S	Carbide/Powder Metallurgy		●	
H	Titanium/Superalloy/Carbon Fiber		●	

Application	Model	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S			
Turning	CCGT 060202-060204-060208-09T302-09T304-09T308-120402-120404-120408		CCGT 060202-060204-060208-09T302-09T304-09T308-120402-120404-120408	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 060202-2T-060204-2T-060208-2T-09T302-2T-09T304-2T-09T308-2T-120402-2T-120404-2T-120408-2T		CCGT 060202-2T-060204-2T-060208-2T-09T302-2T-09T304-2T-09T308-2T-120402-2T-120404-2T-120408-2T	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 060202-060204-060208-09T302-09T304-09T308-120402-120404-120408		CCGT 060202-060204-060208-09T302-09T304-09T308-120402-120404-120408	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 060202-AL-060204-AL-060208-AL-09T302-AL-09T304-AL-09T308-AL-120402-AL-120404-AL-120408-AL		CCGT 060202-AL-060204-AL-060208-AL-09T302-AL-09T304-AL-09T308-AL-120402-AL-120404-AL-120408-AL	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 060202-ER-U-060204-ER-U-060208-ER-U-09T302-ER-U-09T304-ER-U-09T308-ER-U-120402-ER-U-120404-ER-U-120408-ER-U		CCGT 060202-ER-U-060204-ER-U-060208-ER-U-09T302-ER-U-09T304-ER-U-09T308-ER-U-120402-ER-U-120404-ER-U-120408-ER-U	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	
	CCGT 060202-EL-U-060204-EL-U-060208-EL-U-09T302-EL-U-09T304-EL-U-09T308-EL-U-120402-EL-U-120404-EL-U-120408-EL-U		CCGT 060202-EL-U-060204-EL-U-060208-EL-U-09T302-EL-U-09T304-EL-U-09T308-EL-U-120402-EL-U-120404-EL-U-120408-EL-U	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	
Turning with Groove	CCGT 060202-2T-060204-2T-060208-2T-09T302-2T-09T304-2T-09T308-2T-120402-2T-120404-2T-120408-2T		CCGT 060202-2T-060204-2T-060208-2T-09T302-2T-09T304-2T-09T308-2T-120402-2T-120404-2T-120408-2T	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 060201 <sup>9</sup> /L-H-060202 <sup>9</sup> /L-H-060204 <sup>9</sup> /L-H-09T301 <sup>9</sup> /L-H-09T302 <sup>9</sup> /L-H-09T304 <sup>9</sup> /L-H		CCGT 060201 <sup>9</sup> /L-H-060202 <sup>9</sup> /L-H-060204 <sup>9</sup> /L-H-09T301 <sup>9</sup> /L-H-09T302 <sup>9</sup> /L-H-09T304 <sup>9</sup> /L-H	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	

Application	Model	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S			
Turning	CCGT 060202-AL-060204-AL-060208-AL-09T302-AL-09T304-AL-09T308-AL-120402-AL-120404-AL-120408-AL		CCGT 060202-AL-060204-AL-060208-AL-09T302-AL-09T304-AL-09T308-AL-120402-AL-120404-AL-120408-AL	6.2, 6.0, 5.6, 9.4, 9.2, 8.8, 12.6, 12.4, 12.0	0.2, 0.4, 0.8																	
	CCGT 0301005R-030101R-030102R-030104R-0401005R-040101R-040102R-040104R		CCGT 0301005R-030101R-030102R-030104R-0401005R-040101R-040102R-040104R	3.6, 3.5, 3.3, 3.1, 4.3, 4.2, 4.1, 3.9	0.05, 0.1, 0.2, 0.4																	
	CCGT 0301005L-030101L-030102L-030104L-0401005L-040101L-040102L-040104L		CCGT 0301005L-030101L-030102L-030104L-0401005L-040101L-040102L-040104L	3.6, 3.5, 3.3, 3.1, 4.3, 4.2, 4.1, 3.9	0.05, 0.1, 0.2, 0.4																	
	CCGT 060201ER-U-060202ER-U-060204ER-U-09T301ER-U-09T302ER-U-09T304ER-U		CCGT 060201ER-U-060202ER-U-060204ER-U-09T301ER-U-09T302ER-U-09T304ER-U	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	
	CCGT 060201EL-U-060202EL-U-060204EL-U-09T301EL-U-09T302EL-U-09T304EL-U		CCGT 060201EL-U-060202EL-U-060204EL-U-09T301EL-U-09T302EL-U-09T304EL-U	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	
	CCGT 060201 <sup>9</sup> /L-H-060202 <sup>9</sup> /L-H-060204 <sup>9</sup> /L-H-09T301 <sup>9</sup> /L-H-09T302 <sup>9</sup> /L-H-09T304 <sup>9</sup> /L-H		CCGT 060201 <sup>9</sup> /L-H-060202 <sup>9</sup> /L-H-060204 <sup>9</sup> /L-H-09T301 <sup>9</sup> /L-H-09T302 <sup>9</sup> /L-H-09T304 <sup>9</sup> /L-H	6.5, 6.2, 6.0, 9.7, 9.4, 9.2	0.1, 0.2, 0.4																	

Application	Model	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S		
Turning	CCMT 060202-TF-060204-TF-060208-TF-09T304-TF-120404-TF-120408-TF		CCMT 060202-TF-060204-TF-060208-TF-09T304-TF-120404-TF-120408-TF	6.2, 6.0, 5.6, 9.2, 8.8, 12.4, 12.0	0.2, 0.4, 0.8																
	CCMT 060202-MSF-060204-MSF-060208-MSF-09T304-MSF-120404-MSF-120408-MSF		CCMT 060202-MSF-060204-MSF-060208-MSF-09T304-MSF-120404-MSF-120408-MSF	6.2, 6.0, 5.6, 9.2, 8.8, 12.4, 12.0	0.2, 0.4, 0.8																
	CCMT 060202-FG-060204-FG-09T304-FG		CCMT 060202-FG-060204-FG-09T304-FG	6.2, 6.0, 8.8	0.2, 0.4, 0.8																
	CCMT 060204-TM-060208-TM-09T308-TM-120404-TM-120408-TM		CCMT 060204-TM-060208-TM-09T308-TM-120404-TM-120408-TM	6.0, 5.6, 9.2, 8.8, 12.4, 12.0	0.4, 0.8																
	CCMT 060204-MT-060208-MT-09T304-MT-09T308-MT		CCMT 060204-MT-060208-MT-09T304-MT-09T308-MT	6.0, 5.6, 9.2, 8.8	0.4, 0.8																
	CCMT 060204-GM-060208-GM-09T304-GM-09T308-GM-120404-GM-120408-GM		CCMT 060204-GM-060208-GM-09T304-GM-09T308-GM-120404-GM-120408-GM	6.0, 5.6, 9.2, 8.8, 12.4, 12.0	0.4, 0.8																
Turning with Groove	CCMT 060204-HQ-060208-HQ-09T304-HQ-09T308-HQ		CCMT 060204-HQ-060208-HQ-09T304-HQ-09T308-HQ	6.0, 5.6, 9.2, 8.8	0.4, 0.8																
	CCMT 060204-060208-09T304-09T308-120404-120408		CCMT 060204-060208-09T304-09T308-120404-120408	6.0, 5.6, 9.2, 8.8, 12.4, 12.0	0.4, 0.8																

Application	Model	Product Image	Specification	L	φd	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
Turning	CCMT 060204-TR-060208-TR-09T304-TR-120408-TR		CCMT 060204-TR-060208-TR-09T304-TR-120408-TR	6.0, 5.6, 9.2, 8.8, 12.0, 11.6	0.4, 0.8, 0.8, 0.8, 1.2															

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GM.  
TD.

ABS  
TBP  
TKFB

T.N/E  
GE.  
.GR

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

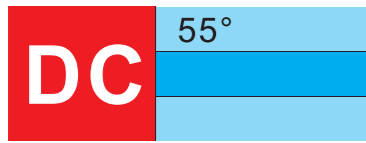
TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GM.  
TD.

ABS  
TBP  
TKFB

T.N/E  
GE.  
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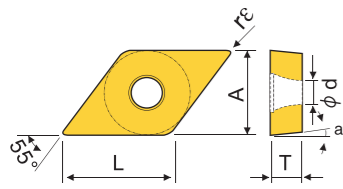


(External Toolholder): B21-B22  
 (Small Parts Toolholder): AB03-AB11  
 (Internal Toolholder): B49-B53

Model	A	T	φd	a
DC..0702..	6.35	2.38	2.8	7°
DC..11T3..	9.525	3.97	4.4	7°
DC..1504..	12.7	4.76	5.56	7°

(Cutting Speed): m/min<sup>1</sup>

Model	Cutter Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
P	High Speed Steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
M	HRC46-58			10-30	150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
K	Coated Carbide		300-1500		100-300	100-350					20-60	20-60	20-80	200-300	200-350
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	300-1200					300-1200							150-200	150-250
S	Carbide/Powder Metallurgy	10-30									20-50				
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		



Application	Cutting Parameter	Product Image	Specification	L	φd	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
P	Steel																		
M	Stainless Steel																		
K	Iron																		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood																		
S	Carbide/Powder Metallurgy																		
H	Titanium/Superalloy/Carbon Fiber																		

Application	Cutting Parameter	Product Image	Specification	L	φd	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
P	Steel																		
M	Stainless Steel																		
K	Iron																		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood																		
S	Carbide/Powder Metallurgy																		
H	Titanium/Superalloy/Carbon Fiber																		

DCGT 070202	070204	070208	11T302	11T304	11T308	7.5	0.2												
DCGT 070202-2T	070204-2T	070208-2T	11T302-2T	11T304-2T	11T308-2T	7.5	0.2												
DCGT 070201	070202	070204	11T302	11T304	11T308	7.7	0.1												
DCGT 070202-AL	070204-AL	070208-AL	11T302-AL	11T304-AL	11T308-AL	7.5	0.2												
DCGT 070202	070204	070208	11T302	11T304	11T308	7.5	0.2												
DCGT 070202-2T	070204-2T	070208-2T	11T302-2T	11T304-2T	11T308-2T	7.5	0.2												

DCGT 070202-AL	070204-AL	070208-AL	11T302-AL	11T304-AL	11T308-AL	7.5	0.2												
DCGT 070205R	070201R	070202R	070204R	11T3005R	11T301R	11T302R	11T304R	7.8	0.05										
DCGT 070205L	070201L	070202L	070204L	11T3005L	11T301L	11T302L	11T304L	7.8	0.05										
DCGT 070201ER-U	070202ER-U	070204ER-U	11T301ER-U	11T302ER-U	11T304ER-U	7.8	0.1												
DCGT 070201EL-U	070202EL-U	070204EL-U	11T301EL-U	11T302EL-U	11T304EL-U	7.8	0.1												
DCGT 070201 <sup>0</sup> L-H	070202 <sup>0</sup> L-H	070204 <sup>0</sup> L-H	11T301 <sup>0</sup> L-H	11T302 <sup>0</sup> L-H	11T304 <sup>0</sup> L-H	7.8	0.1												

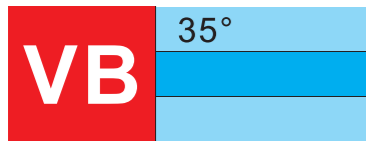
Application	Cutting Parameter	Product Image	Specification	L	φd	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
DCMT 070202-TF	070204-TF	070208-TF	11T302-TF	11T304-TF	11T308-TF	7.5	0.2												
DCMT 070202-FG	070204-FG	070208-FG	11T302-FG	11T304-FG	11T308-FG	7.5	0.2												
DCMT 070204-TM	070208-TM	11T304-TM	11T308-TM			7.3	0.4												
DCMT 070204-MT	070208-MT	11T304-MT	11T308-MT			7.3	0.4												
DCMT 070202-GM	070204-GM	070208-GM	11T302-GM	11T304-GM	11T308-GM	7.5	0.2												
DCMT 070204-HQ	070208-HQ	11T304-HQ	11T308-HQ			7.3	0.4												
DCMT 070204	070208	11T304	11T308			7.3	0.4												
DCMT 070204-MV	070208-MV	11T304-MV	11T308-MV			7.3	0.4												

Application	Cutting Parameter	Product Image	Specification	L	φd	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S	
DCMT 11T304-TR	11T308-TR	11T312-TR				11.2	0.4												
						10.8	0.8												
						10.4	1.2												







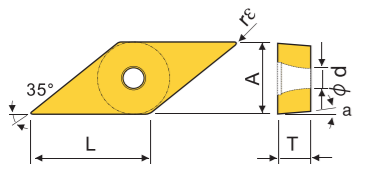


(External Toolholder): B25-B26  
(Small Parts Toolholder): AB04/AB07/AB12  
(Internal Toolholder): B61-B65

Model	A	T	φd	a
VB..1103..	6.35	3.18	2.8	5°
VB..1604..	9.525	4.76	4.4	5°
VC..1103	6.35	3.18	2.8	7°
VC..1604..	9.525	4.76	4.4	7°
VC..2205..	12.7	5.56	5.6	7°

(Cutting Speed) : m/min<sup>1</sup>

Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S
P				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
M				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
K										50-150	70-150	50-200		
N													200-300	200-350
S													150-200	150-250
H														



Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	●	✖
M	Stainless Steel	●	●	✖
K	Iron	●	●	✖
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	✖
S	Carbide/Powder Metallurgy	●	●	✖
H	Titanium/Superalloy/Carbon Fiber	●	●	✖

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S								
Fracture	VBGT 110302		110304	11.0	0.2	●	●																				
	160402		16.1	0.2	●	●																					
	160404		15.6	0.4	●	●																					
	160408		14.6	0.8	●	●																					
	VCGT 110302		11.0	0.2	●	●																					
	110304		10.0	0.4	●	●																					
	110308		9.0	0.8	●	●																					
	160402		16.1	0.2	●	●																					
	160404		15.6	0.4	●	●																					
	160408		14.6	0.8	●	●																					

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S							
Fracture	VBGT 110302-AL		110304-AL	11.0	0.2	●	●																			
	160402-AL		16.1	0.2	●	●																				
	160404-AL		15.6	0.4	●	●																				
	160408-AL		14.6	0.8	●	●																				
	VCGT 110302-AL		11.0	0.2	●	●																				
	110304-AL		10.0	0.4	●	●																				
	110308-AL		9.0	0.8	●	●																				
	160402-AL		16.1	0.2	●	●																				
	160404-AL		15.6	0.4	●	●																				
	160408-AL		14.6	0.8	●	●																				

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S						
Fracture	VBGT 110302-2T		110304-2T	11.0	0.2	●	●																		
	160402-2T		16.1	0.2	●	●																			
	160404-2T		15.6	0.4	●	●																			
	160408-2T		14.6	0.8	●	●																			
	VCGT 110302-2T		11.0	0.2	●	●																			
	110304-2T		10.0	0.4	●	●																			
	110308-2T		9.0	0.8	●	●																			
	160402-2T		16.1	0.2	●	●																			
	160404-2T		15.6	0.4	●	●																			
	160408-2T		14.6	0.8	●	●																			

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S				
Fracture	VBGT 110302		110304	11.0	0.2	●	●																
	160402		16.1	0.2	●	●																	
	160404		15.6	0.4	●	●																	
	160408		14.6	0.8	●	●																	
	VCGT 110302		11.0	0.2	●	●																	
	110304		10.0	0.4	●	●																	
	110308		9.0	0.8	●	●																	
	160402		16.1	0.2	●	●																	
	160404		15.6	0.4	●	●																	
	160408		14.6	0.8	●	●																	

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S		
Fracture	VBGW 110301		110302	11.0	0.1	●	●														
	110304		10.0	0.4	●	●															
	110308		9.0	0.8	●	●															
	160402		16.1	0.2	●	●															
	160404		15.6	0.4	●	●															
	160408		14.6	0.8	●	●															
	160412		13.5	1.2	●	●															
	VCGW 110301		11.0	0.1	●	●															
	110302		11.0	0.2	●	●															
	110304		10.0	0.4	●	●															

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC325	ZP152	ZP153	ZP163	ZK50	ZK50S	
Fracture	VBGT 110302-AL		110304-AL	11.0	0.2	●	●													
	110308-AL		9.0	0.8	●	●														
	160402-AL		16.1	0.2	●	●														
	160404-AL		15.6	0.4	●	●														
	160408-AL		14.6	0.8	●	●														
	VCGT 110302-AL		11.0	0.2	●	●														
	110304-AL		10.0	0.4	●	●														
	110308-AL		9.0	0.8	●	●														
	160402-AL		16.1	0.2	●	●														
	160404-AL		15.6	0.4	●	●														

Application	Cutting Environment	Stable Cutting
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**:B108-B109**  
(External Toolholder)  
**:B108**  
(Internal Toolholder)



(Cutting Speed):  $m/min$  (mm)

Material	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
P	150-600			150-600		80-250	70-250	100-250
M	150-350			150-350		60-150	70-150	80-150
K	10-30			20-60		20-60	20-60	20-60
N	200-300			50-150		50-150	70-150	
S	300-1500			100-300		130-210	150-200	150-300
H	400-800			100-200		100-160	100-150	150-230
N	300-1200			300-1200				
N	300-1500			300-1500				
N	300-800			300-800				
N	300-1000			300-1000				
S	10-30			10-30				
H	400-600			400-600				
H	100-200			100-200		20-50	20-50	20-60

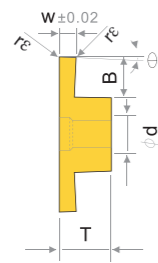
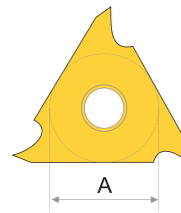


Fig.1

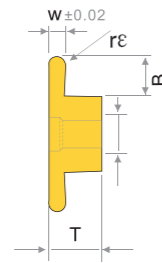
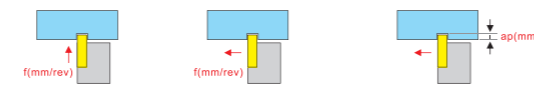


Fig.2 圆弧槽刀

Cutting Environment ● Stable Cutting ● General Cutting ☹ General Cutting(Second recommend) ✖ Unstable Cutting

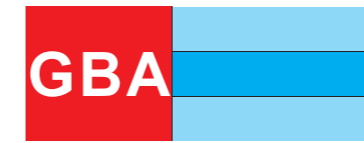
Material	Stable	General	Second	Unstable
P Steel	●	●	☹	✖
M Stainless Steel	●	●	☹	✖
K Iron	●	●	☹	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☹	✖
S Carbide/Powder Metallurgy	●	●	☹	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☹	✖

Specification	Dimension					Fig	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
	W±0.02	B	rE	A	T										
TGF32% 030-005	0.30	0.05													
033-005	0.33														
040-005	0.40														
045-005	0.45	1.25		9.525	3.18	4.5	Fig.1	2°							
050-005	0.50														
050L220	0.50	2.2													
055-005	0.55														
060-005	0.60	1.25													
065-010	0.65														
070-010	0.70														
075-010	0.75														
080-010	0.80	2.05		9.525	3.18	4.5	Fig.1	2°							
085-010	0.85														
090-010	0.90														
095-010	0.95														
100L330	1.00	3.3													
100-010	1.00														
105-010	1.05														
110-010	1.10														
115-010	1.15														
120-010	1.20														
125-010	1.25	2.2		9.525	3.18	4.5	Fig.1	2°							
130-010	1.30														
135-010	1.35														
140-010	1.40														
145-010	1.45														
150-010	1.50														
150L380	1.50	3.8													
155-010	1.55	2.4													
160-015	1.60														
165-015	1.65	2.4													
170-015	1.70														
175-010	1.75	2.4	0.1												
175-015	1.75														
180-015	1.80	2.4		9.525	3.18	4.5	Fig.1	2°							
185-015	1.85														
190-015	1.90														
195-015	1.95	2.7													
200-010	2.00	2.7	0.1												
200-015	2.00	2.7	0.15												
200L400	2.00	4.0	0.1												
210-015	2.10														
215-015	2.15														
220-015	2.20	2.7	0.15												
225-015	2.25														
230-015	2.30			9.525	3.18	4.5	Fig.1	2°							
240-015	2.40														
250-010	2.50	3.0	0.1												
250-015	2.50	3.0	0.15												
250L400	2.50	4.0	0.1												
260-015	2.60														
265-015	2.65														
270-015	2.70	3.0	0.15	9.525	3.18	4.5	Fig.1	2°							
280-015	2.80														
290-015	2.90														
300-020	3.00														
320-020	3.20	3.4	0.2												



Code Description T.1 Feed of Grooving T.2 Feed of Transverse Grooving T.3 Depth of Transverse Grooving

Application	Processed Material	Cutting Parameter												
		TGF32% 033-055			TGF32% 055-095			TGF32% 100-145			TGF32% 150-250			
		T.1	T.2	T.3	T.1	T.2	T.3	T.1	T.2	T.3	T.1	T.2	T.3	
P	Steel	0.01	-	0.02	-	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.02
M	Stainless Steel	0.01	-	0.02	-	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02
K	Iron	0.01	-	0.02	-	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	0.01	-	0.02	-	0.03	0.03	0.02	0.03	0.02	0.02	0.03	0.02	0.02
S	Carbide/Powder Metallurgy	0.01	-	0.01	-	0.01	-	0.01	0.01	0.01	0.02	0.01	0.01	0.02
H	Titanium/Superalloy/Carbon Fiber	0.01	-	0.01	-	0.01	-	0.01	0.01	0.01	0.02	0.01	0.01	0.02



**:B104-B105**  
(External Toolholder)  
**:B105**  
(Internal Toolholder)



(Cutting Speed):  $m/min$  (mm)

Material	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
P	150-600			150-600		80-250	70-250	100-250
M	150-350			150-350		60-150	70-150	80-150
K	10-30			20-60		20-60	20-60	20-60
N	200-300			50-150		50-150	70-150	
S	300-1500			100-300		130-210	150-200	150-300
H	400-800			100-200		100-160	100-150	150-230
N	300-1200			300-1200				
N	300-1500			300-1500				
N	300-800			300-800				
N	300-1000			300-1000				
S	10-30			10-30				
H	400-600			400-600				
H	100-200			100-200		20-50	20-50	20-60

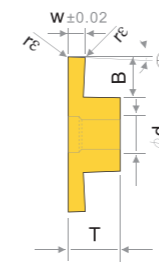
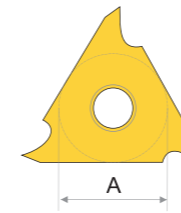


Fig.1

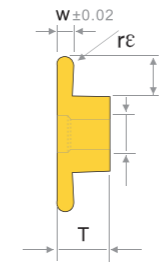


Fig.2

Cutting Environment ● Stable Cutting ● General Cutting ☹ General Cutting(Second recommend) ✖ Unstable Cutting

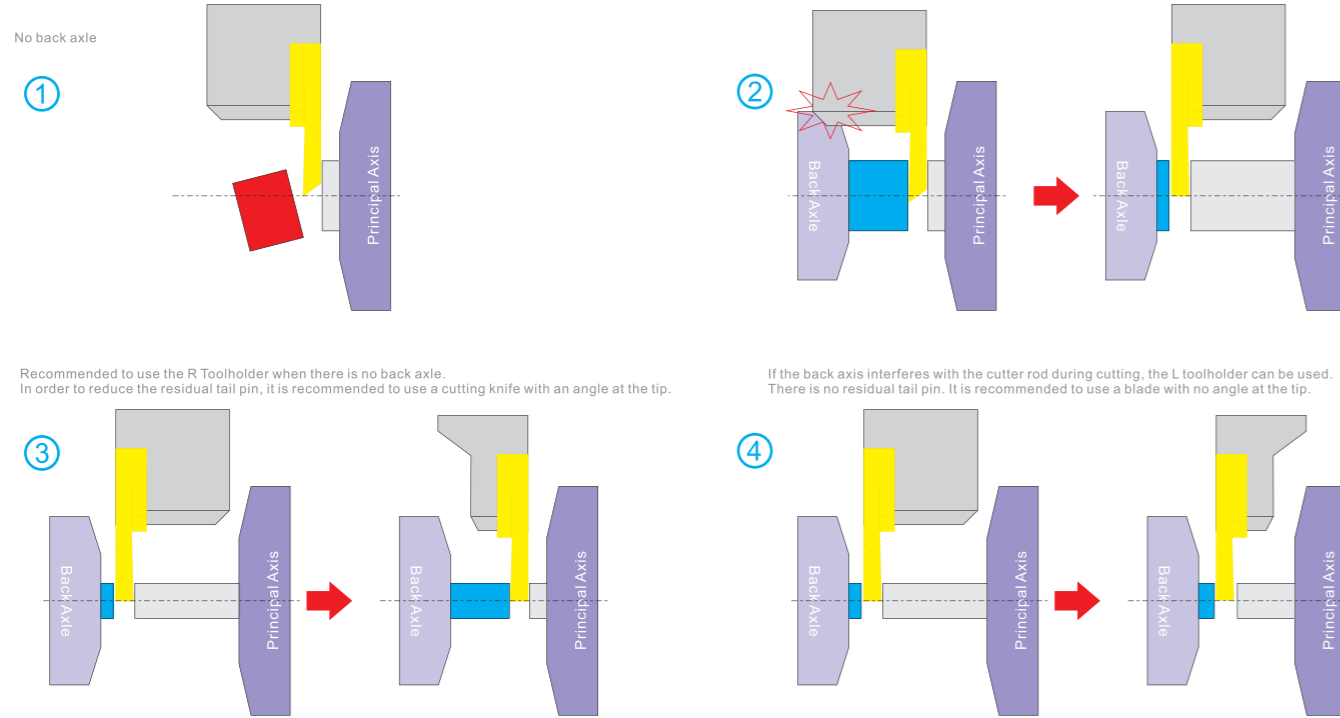
Material	Stable	General	Second	Unstable
P Steel	●	●	☹	✖
M Stainless Steel	●	●	☹	✖
K Iron	●	●	☹	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☹	✖
S Carbide/Powder Metallurgy	●	●	☹	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☹	✖

Specification	Dimension					Fig	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
	W±0.02	B	rE	A	T										
GBA43% 100-010	1.00														
120-010	1.20	2.0	0.1												
125-010	1.25														
125-020	1.25			12.7	4.76	5.5	Fig.1	2°							
140-020	1.40	2.0	0.2												

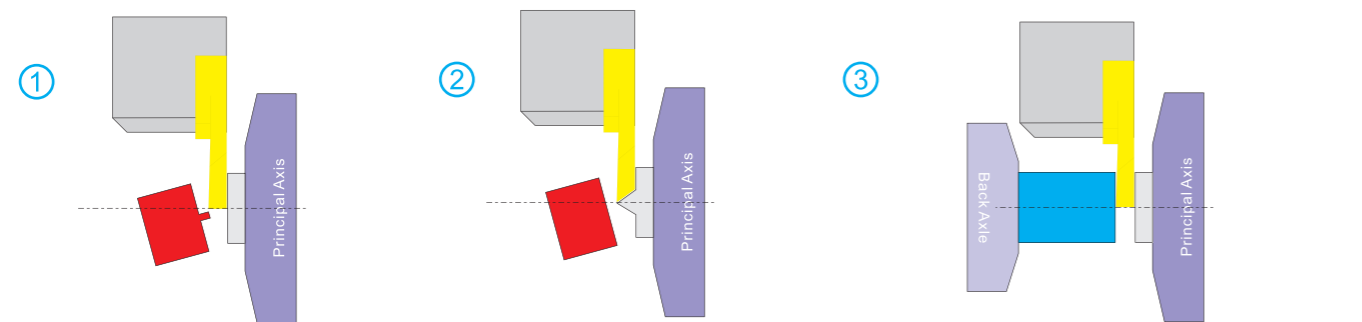




1 How to select the R and L toolholder



2 How to choose flat head / angle head



3 How to choose the right width

Cutter Width = Workpiece Diameter ÷ 7

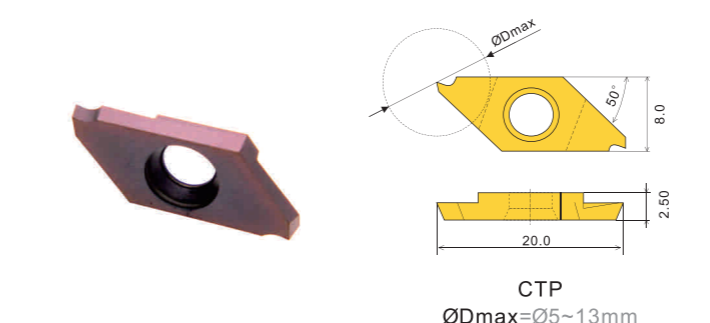
4 Countermeasures for abnormal tool damage

- ① It is recommended to set the processing program with constant linear speed. When the rotation speed is fixed, the closer the tool tip is to the center of the workpiece, the linear speed will be greatly reduced, which is easy to cause abnormal damage such as knife sticking and knife collapsing.
- ② Considering the impact during cutting and insufficient linear speed at the center of workpiece, it is recommended to reduce the feed before cutting (1-2mm) (to 50% of the original).
- ③ Try to avoid intermittent processing.

5 Recommended cutting parameters for grooving / cutting of small parts

Application	Processed Material	Cutting Parameter											
		CTP						CTPA					
		W(mm)											
P	Steel	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
		0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.1	0.15
M	Stainless Steel	0.005	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		0.015	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.1	0.1
K	Iron	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
		0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.1	0.15
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
		0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.12	0.15
S	Carbide/Powder Metallurgy	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.005	0.005	0.005
		0.007	0.008	0.01	0.015	0.015	0.015	0.01	0.015	0.015	0.02	0.025	0.03
H	Titanium/Superalloy/Carbon Fiber	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.005	0.005	0.005
		0.007	0.008	0.01	0.015	0.015	0.015	0.01	0.015	0.015	0.02	0.025	0.03

CTP (Small Parts Toolholder) AB20



Application	Dimension and Shape	Specification	W <sub>10.05</sub>	B	rE	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856	ZM860
With Groove	CTP 05FR	0.5	2.8	0.03	16°										
	07FR	0.7	4.5	0.05	16°										
	10FR	1.0	6.7	0.05	16°										
	15FR	1.5	6.7	0.05	16°										
	20FR	2.0	6.7	0.05	16°										

(Cutting Speed): m/min\* (mm)

加工材料	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
Steel				150-600			60-250	70-250
Stainless Steel				150-350			70-150	80-150
Iron			10-30				20-60	20-60
Aluminum/Copper/Magnesium/Zinc/Plastic/Wood				200-300			50-150	70-150
Carbide/Powder Metallurgy		300-1500		100-300			130-210	150-200
Titanium/Superalloy/Carbon Fiber		400-800		100-200			100-160	100-150

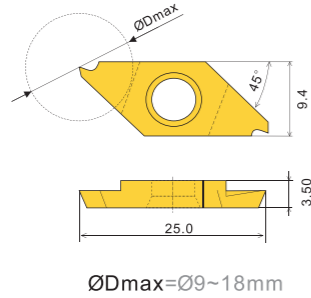
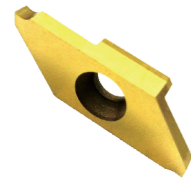
Application	Dimension and Shape	Specification	W <sub>10.05</sub>	B	rE	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856	ZM860
Without Groove	CTP 10FRV	1.0	6.7	0.0	20°										
	15FRV	1.5	6.7	0.0	20°										
	20FRV	2.0	6.7	0.0	20°										

Application	Dimension and Shape	Specification	W <sub>10.05</sub>	B	rE	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856	ZM860
With Groove	CTP 05FRN	0.5	2.8	0.03	0°										
	10FRN	1.0	6.7	0.05	0°										
	15FRN	1.5	6.7	0.05	0°										
	20FRN	2.0	6.7	0.05	0°										
With Groove	CTP 10FRK	1.0	6.7	0.05	16°										
	15FRK	1.5	6.7	0.05	16°										
	20FRK	2.0	6.7	0.05	16°										
Without Groove	CTP 07FL	0.7	4.5	0.05	16°										
	10FL	1.0	6.7	0.05	16°										
	15FL	1.5	6.7	0.05	16°										
	20FL	2.0	6.7	0.05	16°										
Without Groove	CTP 10FLV	1.0	6.7	0.0	20°										
	15FLV	1.5	6.7	0.0	20°										
	20FLV	2.0	6.7	0.0	20°										
Without Groove	CTP 05FLN	0.5	2.8	0.03	0°										
	10FLN	1.0	6.7	0.05	0°										
	15FLN	1.5	6.7	0.05	0°										
	20FLN	2.0	6.7	0.05	0°										
Without Groove	CTP 15FLNV	1.5	6.7	0.0	0°										
	20FLNV	2.0	6.7	0.0	0°										
Without Groove	CTP 05FLK	0.5	2.8	0.03	17°										
	10FLK	1.0	6.7	0.05	16°										
	15FLK	1.5	6.7	0.05	16°										
	20FLK	2.0	6.7	0.05	16°										
	15FLKB	1.5	6.7	0.05	16°										

☆θ Installation Angle For The Toolholder

CTPA

:AB20  
(Small Parts Toolholder)



切削线速度 (Cutting Speed): m/min<sup>\*</sup> (mm)

加工材料	刀具材料	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
低碳钢	金剛石				150-600		60-250	70-250	100-250
高碳钢					150-350		60-150	70-150	80-150
淬硬钢 HRC46-58			10-30				20-60	20-60	20-60
不锈钢				200-300			50-150	50-150	70-150
灰口铸铁		300-1500		100-300			130-210	150-200	150-300
球墨铸铁/轧辊		400-800		100-200			100-160	100-150	150-230
镁/铝/塑料/木材		300-1200			300-1200				
铝合金 HB50-70		300-1500			300-1500				
淬硬铝合金 HB70-110		300-800			300-800				
铜/青铜/黄铜		300-1000			300-1000				
硬质合金/粉末冶金		10-30			10-30				
硅填充塑料/碳纤维		400-600			400-600				
钛/高温合金/碳纤维		100-200			100-200		20-50	20-50	20-60

Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

Material	Stable	General	Second	Unstable
P Steel	●	●	☺	✖
M Stainless Steel	●	●	☺	✖
K Iron	●	●	☺	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☺	✖
S Carbide/Powder Metallurgy	●	●	☺	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☺	✖

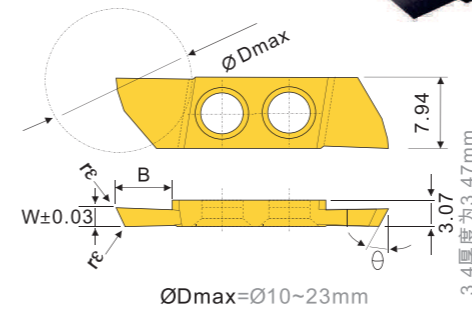
Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			W <sub>±0.05</sub>	B	r <sub>e</sub>	θ								
Cut-off	With Groove	CTPA 07FR 10FR 15FR 20FR 25FR 30FR	0.7	4.5	0.05	16°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													
Cut-off/Grooving	With Groove	CTPA 07FRN 10FRN 15FRN 20FRN 25FRN 30FRN	0.7	4.5	0.05	0°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													
Cut-off	With Groove	CTPA 07FRK 10FRK 15FRK 20FRK	0.7	4.5	0.05	16°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													
Cut-off	With Groove	CTPA 07FL 10FL 15FL 20FL 25FL 30FL	0.7	4.5	0.05	16°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													
Cut-off/Grooving	With Groove	CTPA 07FLN 10FLN 15FLN 20FLN 25FLN 30FLN	0.7	4.5	0.05	0°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													
Cut-off	With Groove	CTPA 07FLK 10FLK 15FLK 20FLK	0.7	4.5	0.05	16°	●	●	●	●	●	●	●	●
			1.0	6.7										
			1.5	9.2										
			2.0	9.2										
			2.5	9.2										
3.0	9.2													

AB10

☆ θ Installation Angle For The Toolholder

CTPW

:AB21  
(Small Parts Toolholder)



(Cutting Speed): m/min<sup>\*</sup> (mm)

加工材料	刀具材料	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
低碳钢	金剛石				150-600		60-250	70-250	100-250
高碳钢					150-350		60-150	70-150	80-150
淬硬钢 HRC46-58			10-30				20-60	20-60	20-60
不锈钢				200-300			50-150	50-150	70-150
灰口铸铁		300-1500		100-300			130-210	150-200	150-300
球墨铸铁/轧辊		400-800		100-200			100-160	100-150	150-230
镁/铝/塑料/木材		300-1200			300-1200				
铝合金 HB50-70		300-1500			300-1500				
淬硬铝合金 HB70-110		300-800			300-800				
铜/青铜/黄铜		300-1000			300-1000				
硬质合金/粉末冶金		10-30			10-30				
硅填充塑料/碳纤维		400-600			400-600				
钛/高温合金/碳纤维		100-200			100-200		20-50	20-50	20-60

Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

Material	Stable	General	Second	Unstable
P Steel	●	●	☺	✖
M Stainless Steel	●	●	☺	✖
K Iron	●	●	☺	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☺	✖
S Carbide/Powder Metallurgy	●	●	☺	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☺	✖

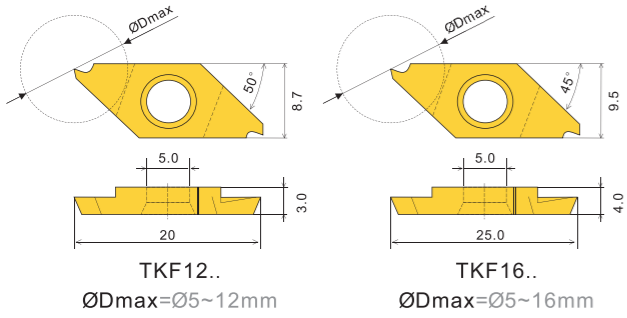
Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			W <sub>±0.05</sub>	B	r <sub>e</sub>	θ								
Cut-off	With Groove	CTPW10FR 15FR 20FR 25FR 30FR 34FR	1.0	5.0	0.06	15°	●	●	●	●	●	●	●	●
			1.5	8.5										
			2.0	11.5										
			2.5	11.5										
			3.0	11.5										
3.4	11.5													
Cut-off/Grooving	With Groove	CTPW10FRN 15FRN 20FRN 25FRN 30FRN 34FRN	1.0	5.0	0.06	0°	●	●	●	●	●	●	●	●
			1.5	8.5										
			2.0	11.5										
			2.5	11.5										
			3.0	11.5										
3.4	11.5													
Cut-off	With Groove	CTPW10FL 15FL 20FL 25FL 30FL 34FL	1.0	5.0	0.06	15°	●	●	●	●	●	●	●	●
			1.5	8.5										
			2.0	11.5										
			2.5	11.5										
			3.0	11.5										
3.4	11.5													
Cut-off/Grooving	With Groove	CTPW10FLN 15FLN 20FLN 25FLN 30FLN 34FLN	1.0	5.0	0.06	0°	●	●	●	●	●	●	●	●
			1.5	8.5										
			2.0	11.5										
			2.5	11.5										
			3.0	11.5										
3.4	11.5													
End Face Grooving	With Groove	CTPW20FLN-D 25FLN-D 30FLN-D 34FLN-D	2.0	9.0	0.06	0°	●	●	●	●	●	●	●	●
			2.5	11.5										
			3.0	11.5										
			3.0	11.5										
			3.4	11.5										

☆ θ Installation Angle For The Toolholder





AB05/AB25  
(Small Parts Toolholder)



(Cutting Speed) : m/min<sup>1</sup> (mm)

Material	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
Material Characteristics	Diamond	Carbide	Hardened Steel	Steel Surface	SuperHard	Steel	Forge	Steelsheet Steel
P				150-600		60-250	70-250	100-250
M			10-30	150-350		60-150	70-150	80-150
K		300-1500		200-300		20-60	20-60	20-60
N		400-800		100-300		50-150	50-150	70-150
S	300-1200			100-200		100-160	100-150	150-230
H	300-1500			300-1200				
	300-800			300-800				
	300-1000			300-1000				
	10-30			10-30				
	400-600			400-600				
	100-200			100-200		20-50	20-50	20-60

Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

Material	Stable Cutting	General Cutting	General Cutting(Second recommend)	Unstable Cutting
P Steel	●	●	☺	✖
M Stainless Steel	●	●	☺	✖
K Iron	●	●	☺	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☺	✖
S Carbide/Powder Metallurgy	●	●	☺	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☺	✖

Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

Material	Stable Cutting	General Cutting	General Cutting(Second recommend)	Unstable Cutting
P Steel	●	●	☺	✖
M Stainless Steel	●	●	☺	✖
K Iron	●	●	☺	✖
N Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	☺	✖
S Carbide/Powder Metallurgy	●	●	☺	✖
H Titanium/Superalloy/Carbon Fiber	●	●	☺	✖

Application	Dimension and Shape	Specification	Dimension				Application								
			W <sub>±0.03</sub>	B	r <sub>c</sub>	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856	
μm/100	TKF12R 050-S16R 070-S16R 100-S16R 125-S16R 150-S16R 200-S16R	0.5	2.8	0.03	16°	●	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF16R 100-S16R 125-S16R 150-S16R 200-S16R 250-S16R 300-S16R	1.0	8.5	0.05	16°	●	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF12R 050-S 070-S 100-S 125-S 150-S 200-S	0.5	2.8	0.03	0°	●	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF16R 100-S 125-S 150-S 200-S 250-S 300-S	1.0	8.5	0.05	0°	●	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF12L 050-S16R 070-S16R 100-S16R 125-S16R 150-S16R 200-S16R	0.5	2.8	0.03	16°	●	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF16L 100-S16R 125-S16R 150-S16R 200-S16R 250-S16R 300-S16R	1.0	8.5	0.05	16°	●	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF12L 050-S 070-S 100-S 125-S 150-S 200-S	0.5	2.8	0.03	0°	●	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●	●
μm/100	TKF16L 100-S 125-S 150-S 200-S 250-S 300-S	1.0	8.5	0.05	0°	●	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●	●

Application	Dimension and Shape	Specification	Dimension				Application							
			W <sub>±0.03</sub>	B	r <sub>c</sub>	θ	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
μm/100	TKF12R 050N-S16R 070N-S16R 100N-S16R 125N-S16R 150N-S16R 200N-S16R	0.5	2.8	0.03	20°	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●
μm/100	TKF16R 100N-S16R 125N-S16R 150N-S16R 200N-S16R 250N-S16R 300N-S16R	1.0	8.5	0.05	20°	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●
μm/100	TKF12R 050N-S 070N-S 100N-S 125N-S 150N-S 200N-S	0.5	2.8	0.03	0°	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●
μm/100	TKF16R 100N-S 125N-S 150N-S 200N-S 250N-S 300N-S	1.0	8.5	0.05	0°	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●
μm/100	TKF12L 050N-S16R 070N-S16R 100N-S16R 125N-S16R 150N-S16R 200N-S16R	0.5	2.8	0.03	20°	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●
μm/100	TKF16L 100N-S16R 125N-S16R 150N-S16R 200N-S16R 250N-S16R 300N-S16R	1.0	8.5	0.05	20°	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●
μm/100	TKF12L 050N-S 070N-S 100N-S 125N-S 150N-S 200N-S	0.5	2.8	0.03	0°	●	●	●	●	●	●	●	●	●
		0.7	4.5			●	●	●	●	●	●	●	●	●
μm/100	TKF16L 100N-S 125N-S 150N-S 200N-S 250N-S 300N-S	1.0	8.5	0.05	0°	●	●	●	●	●	●	●	●	●
		1.25	8.5			●	●	●	●	●	●	●	●	●

☆ θ Installation Angle For The Toolholder

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

CC  
DC  
RC  
SC  
WB  
TB  
TC  
TP  
VB  
VC

TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GMM  
TDC

ABS  
TBP  
TKFB

GER  
GR

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

CC  
DC  
RC  
SC  
WB  
TB  
TC  
TP  
VB  
VC

TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GMM  
TDC

ABS  
TBP  
TKFB

GER  
GR



(Cutting Speed) : m/min<sup>1</sup> (mm)

Material	PCD	CBN-K	CBN-S	ZN60	ZN90	ZK01	ZC250	ZC251	ZC328	ZP152	ZP153	ZP163	ZK50	ZK50S
<b>A4.</b>														
P				150-600	150-800		70-500	150-600	150-600	70-250	100-250	100-250	80-300	
M			10-30	200-300	200-350					20-80	20-80	20-80		
K		300-1500		100-300	100-350					50-150	70-150	50-200		
N		400-800		100-200	100-250								200-300	200-350
S						300-1200							150-200	150-250
H						300-1500								

Cutting Environment ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Application	Dimensioning	Product Image	Specification	Dimension	PCD	CBN-K	CBN-S	ZN60	ZN90	ZK01	ZC250	ZC251	ZC328	ZP152	ZP153
P			Steel												
M			Stainless Steel												
K			Iron												
N			Aluminum/Copper/Magnesium/Zinc/Plastic/Wood												
S			Carbide/Powder Metallurgy												
H			Titanium/Superalloy/Carbon Fiber												

(External Toolholder) :B101

Application	Dimensioning	Product Image	Specification	Dimension	PCD	CBN-K	CBN-S	ZN60	ZN90	ZK01	ZC250	ZC251	ZC328	ZP152	ZP153
P			Steel												
M			Stainless Steel												
K			Iron												
N			Aluminum/Copper/Magnesium/Zinc/Plastic/Wood												
S			Carbide/Powder Metallurgy												
H			Titanium/Superalloy/Carbon Fiber												

(External Toolholder) :B110

(External Toolholder) :B102

Application	Dimensioning	Product Image	Specification	Dimension	PCD	CBN-K	CBN-S	ZN60	ZN90	ZK01	ZC250	ZC251	ZC328	ZP152	ZP153
P			Steel												
M			Stainless Steel												
K			Iron												
N			Aluminum/Copper/Magnesium/Zinc/Plastic/Wood												
S			Carbide/Powder Metallurgy												
H			Titanium/Superalloy/Carbon Fiber												

(External Toolholder) :B93-B94  
(Internal Toolholder) :B93

Application	Dimensioning	Product Image	Specification	Dimension	PCD	CBN-K	CBN-S	ZN60	ZN90	ZK01	ZC250	ZC251	ZC328	ZP152	ZP153
P			Steel												
M			Stainless Steel												
K			Iron												
N			Aluminum/Copper/Magnesium/Zinc/Plastic/Wood												
S			Carbide/Powder Metallurgy												
H			Titanium/Superalloy/Carbon Fiber												

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

CC  
DC  
RC  
SC  
WB  
TB  
TC  
TP  
VB  
VC

TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GMM  
TDC

ABS  
TBP  
TKFB

GER  
GR

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

CC  
DC  
RC  
SC  
WB  
TB  
TC  
TP  
VB  
VC

TGF  
GBA  
T.N/E

CTP  
TKF

MG.  
MR.  
SP.  
GMM  
TDC

ABS  
TBP  
TKFB

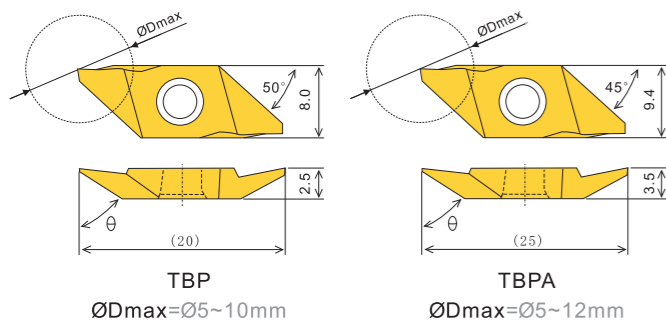
GER  
GR







TBP



Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

P	Steel	●●●●●●●●●●
M	Stainless Steel	●●●●●●●●●●
K	Iron	●●●●●●●●●●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●●●●●●●●●●
S	Carbide/Powder Metallurgy	●●●●●●●●●●
H	Titanium/Superalloy/Carbon Fiber	●●●●●●●●●●

Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			A	B	rE	θ								
External Processing	With Groove	TBP 55FR00	3.0	0.00	55°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 55FR10	3.0	0.10	55°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FR00	3.7	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FR10	3.7	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	Without Groove	TBP 60FRV00	4.8	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV05	5.3	0.05	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV10	5.3	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV20	5.3	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	With Groove	TBPA 60FR00	4.5	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FR10	4.5	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FR20	4.5	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV00	6.3	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	Without Groove	TBPA 60FRV00	6.3	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV05	6.8	0.05	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV10	6.8	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV20	6.8	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●

☆θ Installation Angle For The Toolholder

AB05/AB15/A43 (Small Parts Toolholder)

切削线速度 (Cutting Speed): m/min<sup>1</sup> (mm)

加工材料	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
材料特点	金刚石	铸铁专用	难切削材料	光亮度好	钢质加工	黄色通用	紫色通用	不锈钢通用
低碳钢				150-600		60-250	70-250	100-250
高碳钢				150-350		60-150	70-150	80-150
淬硬钢 HRC46-58			10-30			20-60	20-60	20-60
不锈钢				200-300		50-150	50-150	70-150
灰口铸铁	300-1500	100-300			130-210	150-200	150-300	
球墨铸铁/轧辊	400-800	100-200			100-160	100-150	150-230	
镁/锌/塑料/木材	300-1200			300-1200				
铝合金 HB50-70	300-1500			300-1500				
淬硬铝合金 HB70-110	300-800			300-800				
铜/青铜/黄铜	300-1000			300-1000				
硬质合金/粉末冶金	10-30			10-30				
硅填充塑料/碳纤维	400-600			400-600				
钛/高温合金/碳纤维	100-200			100-200		20-50	20-50	20-60

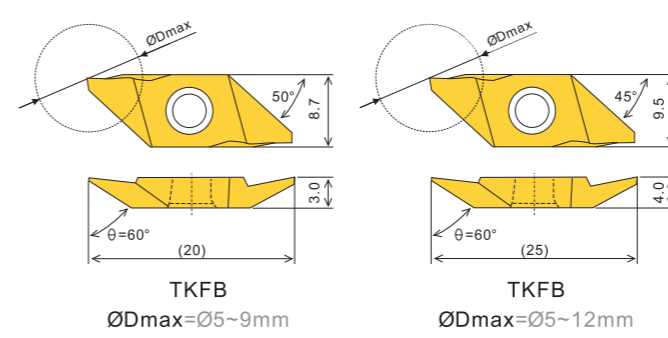
Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

P	Steel	●●●●●●●●●●
M	Stainless Steel	●●●●●●●●●●
K	Iron	●●●●●●●●●●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●●●●●●●●●●
S	Carbide/Powder Metallurgy	●●●●●●●●●●
H	Titanium/Superalloy/Carbon Fiber	●●●●●●●●●●

Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			W <sub>0.05</sub>	B	rE	θ								
External Processing	With Groove	TBP 55FR00	3.0	0.00	55°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 55FR10	3.0	0.10	55°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FR00	3.7	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FR10	3.7	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	Without Groove	TBP 60FRV00	4.8	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV05	5.3	0.05	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV10	5.3	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBP 60FRV20	5.3	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	With Groove	TBPA 60FR00	4.5	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FR10	4.5	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FR20	4.5	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV00	6.3	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
External Processing	Without Groove	TBPA 60FRV00	6.3	0.00	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV05	6.8	0.05	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV10	6.8	0.10	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●
		TBPA 60FRV20	6.8	0.20	60°	●●●●●●●●●●	●	●	●	●	●	●	●	●

☆θ Installation Angle For The Toolholder

TKFB



Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

P	Steel	●●●●●●●●●●
M	Stainless Steel	●●●●●●●●●●
K	Iron	●●●●●●●●●●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●●●●●●●●●●
S	Carbide/Powder Metallurgy	●●●●●●●●●●
H	Titanium/Superalloy/Carbon Fiber	●●●●●●●●●●

Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			W	B	rE	a								
External Processing	With Groove	TKFB12R 15005M	1.5	2.6	0.05	0.25	●	●	●	●	●	●	●	●
		TKFB12R 28005M	2.8	4.6	0.05	0.3	●	●	●	●	●	●	●	●
		TKFB12R 28010M	2.8	4.6	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16R 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●
External Processing	Without Groove	TKFB16R 38010M	3.8	0.3	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16R 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●
		TKFB16R 38010M	3.8	0.3	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16R 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●

☆θ Installation Angle For The Toolholder

AB05/AB25 (Small Parts Toolholder)

(Cutting Speed): m/min<sup>1</sup> (mm)

加工材料	PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
材料特点	金刚石	铸铁专用	难切削材料	光亮度好	钢质加工	黄色通用	紫色通用	不锈钢通用
低碳钢				150-600		60-250	70-250	100-250
高碳钢				150-350		60-150	70-150	80-150
淬硬钢 HRC46-58			10-30			20-60	20-60	20-60
不锈钢				200-300		50-150	50-150	70-150
灰口铸铁	300-1500	100-300			130-210	150-200	150-300	
球墨铸铁/轧辊	400-800	100-200			100-160	100-150	150-230	
镁/锌/塑料/木材	300-1200			300-1200				
铝合金 HB50-70	300-1500			300-1500				
淬硬铝合金 HB70-110	300-800			300-800				
铜/青铜/黄铜	300-1000			300-1000				
硬质合金/粉末冶金	10-30			10-30				
硅填充塑料/碳纤维	400-600			400-600				
钛/高温合金/碳纤维	100-200			100-200		20-50	20-50	20-60

Cutting Environment ● Stable Cutting ● General Cutting ☺ General Cutting(Second recommend) ✖ Unstable Cutting

P	Steel	●●●●●●●●●●
M	Stainless Steel	●●●●●●●●●●
K	Iron	●●●●●●●●●●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●●●●●●●●●●
S	Carbide/Powder Metallurgy	●●●●●●●●●●
H	Titanium/Superalloy/Carbon Fiber	●●●●●●●●●●

Application	Dimension and Shape	Specification	Dimension				PCD	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZM856
			W	B	rE	a								
External Processing	With Groove	TKFB12L 15005M	1.5	2.6	0.05	0.25	●	●	●	●	●	●	●	●
		TKFB12L 28005M	2.8	4.6	0.05	0.3	●	●	●	●	●	●	●	●
		TKFB12L 28010M	2.8	4.6	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16L 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●
External Processing	Without Groove	TKFB16L 38010M	3.8	0.3	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16L 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●
		TKFB16L 38010M	3.8	0.3	0.1	0.3	●	●	●	●	●	●	●	●
		TKFB16L 38005M	3.8	0.3	0.05	0.3	●	●	●	●	●	●	●	●

☆θ Installation Angle For The Toolholder

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B113  
(Internal Toolholder)

(Cutting Speed) : m/min<sup>1</sup> (mm)

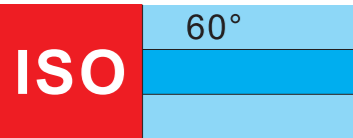
Group	Cutting Material	PCD	CBN-K	CBN-S	ZN60	ZN80	ZK01	ZC250	ZC251	ZC32S	ZP152	ZP153	ZP163	ZK50	ZK50S
P	Low Carbon Steel				150-600	150-800		70-500	150-500	150-800	70-250	100-250	80-300		
	HRC46-58			10-30	150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
M	Stainless Steel				200-300	200-350					50-150	70-150	50-200		
K	Gray Cast Iron		300-1500		100-300	100-350								200-300	200-350
	White Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	HB50-70	300-1500					300-1500								
	HB70-110	300-800					300-800								
S	Copper/Bronze/Alloy	300-1000					300-1000								
	Carbide/Powder Metallurgy	10-30					10-30					20-50			
H	Hard Filled Plaster Hard Fiber	400-500					400-500								
	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Group	Dimensioning	Product Image	Specification	Dimension						Cutting Environment								
				W	B	A	L	H	∅d	Stable Cutting	General Cutting	Unstable Cutting	Stable Cutting	General Cutting	Unstable Cutting			
P	6GR		100	1.0	1.5	5.56	6.44	2.34	2.3	●	●	●	●	●	●	●	●	●
			150	1.5	1.5	5.56	6.44	2.34	2.3	●	●	●	●	●	●	●	●	●
			200	2.0	1.5	5.56	6.44	2.34	2.3	●	●	●	●	●	●	●	●	●
M	7GR		100	1.0	1.5	5.56	7.36	3.08	2.58	●	●	●	●	●	●	●	●	●
			150	1.5	1.5	5.56	7.36	3.08	2.58	●	●	●	●	●	●	●	●	●
			200	2.0	1.5	5.56	7.36	3.08	2.58	●	●	●	●	●	●	●	●	●
N	8GR		100	1.0	1.5	5.56	10.2	3.87	2.58	●	●	●	●	●	●	●	●	●
			150	1.5	2.0	5.56	10.2	3.87	2.58	●	●	●	●	●	●	●	●	●
			200	2.0	2.0	5.56	10.2	3.87	2.58	●	●	●	●	●	●	●	●	●
			250	2.5	2.0	5.56	10.2	3.87	2.58	●	●	●	●	●	●	●	●	●
			300	3.0	2.0	5.56	10.2	3.87	2.58	●	●	●	●	●	●	●	●	●
N	9GR		100	1.0	1.5	6.35	13.0	4.66	2.86	●	●	●	●	●	●	●	●	●
			150	1.5	2.0	6.35	13.0	4.66	2.86	●	●	●	●	●	●	●	●	●
			200	2.0	3.0	6.35	13.0	4.66	2.86	●	●	●	●	●	●	●	●	●
			250	2.5	3.0	6.35	13.0	4.66	2.86	●	●	●	●	●	●	●	●	●
			300	3.0	3.0	6.35	13.0	4.66	2.86	●	●	●	●	●	●	●	●	●
S	15GR		100	1.0	1.5	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			150	1.5	2.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			200	2.0	3.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			250	2.5	3.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			300	3.0	3.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			350	3.5	3.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
			400	4.0	4.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●
450	4.5	4.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●			
500	5.0	5.0	9.2	20.8	5.1	4.8	●	●	●	●	●	●	●	●	●			

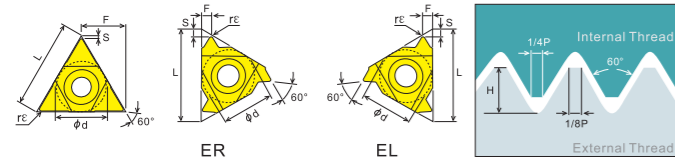
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Thread Application: General Industry



Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

(External Toolholder) : B69

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
ERM	11ER A60	11EL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●
	AG60	AG60	0.5-2.5	48-10	0.05	0.9	1.2	●	●	●	●	●	●	●	●
ERM	16ER A60	16EL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●
	G60	G60	1.75-3.0	14-8	0.27	1.2	1.7	●	●	●	●	●	●	●	●
ERM	AG60	AG60	0.5-3.0	48-8	0.08	1.2	1.7	●	●	●	●	●	●	●	●
	22ER N60	22EL N60	3.5-5.0	7-5	12.7	22	0.53	1.7	2.5	●	●	●	●	●	●
ERM	Q60	Q60	5.5-6.0	4-5-4	15.875	27	0.64	2.1	3.1	●	●	●	●	●	●
	27ER Q60	27EL Q60	5.5-6.0	4-5-4	15.875	27	0.64	2.1	3.1	●	●	●	●	●	●

(Internal Toolholder) : B75-B77

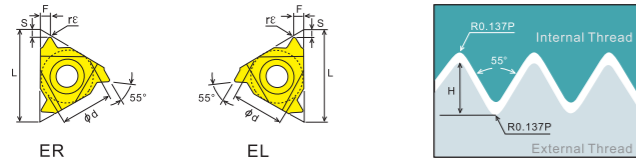
Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
ERM	06IR A60	06IL A60	0.5-1.25	48-20	3.97	6	0.05	0.5	0.6	●	●	●	●	●	●
	08IR A60	08IL A60	0.5-1.5	48-16	4.76	8	0.05	0.6	0.7	●	●	●	●	●	●
IRM	11IR A60	11EL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●
	AG60	AG60	0.5-2.5	48-10	0.05	0.9	1.2	●	●	●	●	●	●	●	●
IRM	16IR A60	16EL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●
	G60	G60	1.75-3.0	14-8	0.16	1.2	1.7	●	●	●	●	●	●	●	●
IRM	AG60	AG60	0.5-3.0	48-8	0.05	1.2	1.7	●	●	●	●	●	●	●	●
	22IR N60	22EL N60	3.5-5.0	7-5	12.7	22	0.30	1.7	2.5	●	●	●	●	●	●
IRM	Q60	Q60	5.5-6.0	4-5-4	15.875	27	0.30	1.8	2.7	●	●	●	●	●	●
	27IR Q60	27EL Q60	5.5-6.0	4-5-4	15.875	27	0.30	1.8	2.7	●	●	●	●	●	●

Application	Specification	Pitch	Depth	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860	
ERM	11ER 035 ISO	11EL 035 ISO	0.35	0.21	0.04	0.8	0.4	●	●	●	●	●	●	●	●	●	
	040 ISO	040 ISO	0.40	0.25	0.04	0.7	0.4	●	●	●	●	●	●	●	●	●	
	045 ISO	045 ISO	0.45	0.28	0.05	0.7	0.4	●	●	●	●	●	●	●	●	●	
	050 ISO	050 ISO	0.50	0.31	0.04	0.6	0.4	●	●	●	●	●	●	●	●	●	
	060 ISO	060 ISO	0.60	0.37	0.07	0.6	0.6	●	●	●	●	●	●	●	●	●	
	070 ISO	070 ISO	0.70	0.43	0.07	0.6	0.6	●	●	●	●	●	●	●	●	●	
	075 ISO	075 ISO	0.75	0.46	0.08	0.6	0.6	●	●	●	●	●	●	●	●	●	
	080 ISO	080 ISO	0.80	0.49	0.09	0.6	0.6	●	●	●	●	●	●	●	●	●	
	100 ISO	100 ISO	1.00	0.61	0.12	0.7	0.7	●	●	●	●	●	●	●	●	●	
	125 ISO	125 ISO	1.25	0.77	0.15	0.8	0.9	●	●	●	●	●	●	●	●	●	
	150 ISO	150 ISO	1.50	0.92	0.18	0.8	1.0	●	●	●	●	●	●	●	●	●	
	175 ISO	175 ISO	1.75	1.07	0.21	0.8	1.1	●	●	●	●	●	●	●	●	●	
ERM	16ER 035 ISO	16EL 035 ISO	0.35	0.21	0.04	0.8	0.4	●	●	●	●	●	●	●	●	●	
	040 ISO	040 ISO	0.40	0.25	0.04	0.7	0.4	●	●	●	●	●	●	●	●	●	
	045 ISO	045 ISO	0.45	0.28	0.05	0.7	0.4	●	●	●	●	●	●	●	●	●	
	050 ISO	050 ISO	0.50	0.31	0.04	0.6	0.4	●	●	●	●	●	●	●	●	●	
	060 ISO	060 ISO	0.60	0.37	0.07	0.6	0.6	●	●	●	●	●	●	●	●	●	
	070 ISO	070 ISO	0.70	0.43	0.07	0.6	0.6	●	●	●	●	●	●	●	●	●	
	075 ISO	075 ISO	0.75	0.46	0.08	0.6	0.6	●	●	●	●	●	●	●	●	●	
	080 ISO	080 ISO	0.80	0.49	0.09	0.6	0.6	●	●	●	●	●	●	●	●	●	
	100 ISO	100 ISO	1.00	0.61	0.12	0.7	0.7	●	●	●	●	●	●	●	●	●	
	125 ISO	125 ISO	1.25	0.77	0.15	0.8	0.9	●	●	●	●	●	●	●	●	●	
	150 ISO	150 ISO	1.50	0.92	0.18	0.8	1.0	●	●	●	●	●	●	●	●	●	
	175 ISO	175 ISO	1.75	1.07	0.21	0.9	1.2	●	●	●	●	●	●	●	●	●	
ERM	22ER 350 ISO	22EL 350 ISO	3.50	2.15	0.44	1.6	2.3	●	●	●	●	●	●	●	●	●	
	400 ISO	400 ISO	4.00	2.45	0.52	1.6	2.3	●	●	●	●	●	●	●	●	●	
	450 ISO	450 ISO	4.50	2.78	0.58	1.7	2.4	●	●	●	●	●	●	●	●	●	
	500 ISO	500 ISO	5.00	3.07	0.64	1.7	2.5	●	●	●	●	●	●	●	●	●	
	ERM	27ER 550 ISO	27EL 550 ISO	5.50	3.37	0.70	1.9	2.7	●	●	●	●	●	●	●	●	●
		600 ISO	600 ISO	6.00	3.68	0.78	2.0	2.9	●	●	●	●	●	●	●	●	●

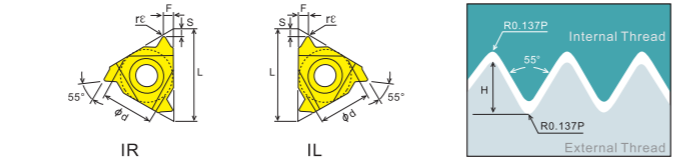
Application	Specification	Pitch	Depth	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
ERM	06IR 050ISO	06IL 050ISO	0.50	0.29	0.03	0.5	0.5	●	●	●	●	●	●	●	●	●
	075ISO	075ISO	0.75	0.43	0.04	0.5	0.5	●	●	●	●	●	●	●	●	●
	100ISO	100ISO	1.00	0.58	0.05	0.5	0.6	●	●	●	●	●	●	●	●	●
	125ISO	125ISO	1.25	0.72	0.07	0.6	0.6	●	●	●	●	●	●	●	●	●
ERM	08IR 050ISO	08IL 050ISO	0.50	0.29	0.04	0.6	0.5	●	●	●	●	●	●	●	●	●
	075ISO	075ISO	0.75	0.43	0.05	0.6	0.5	●	●	●	●	●	●	●	●	●
	100ISO	100ISO	1.00	0.58	0.05	0.6	0.6	●	●	●	●	●	●	●	●	●
	125ISO	125ISO	1.25	0.72	0.07	0.6	0.7	●	●	●	●	●	●	●	●	●
ERM	11IR 035 ISO	11IL 035 ISO	0.35	0.20	0.02	0.8	0.3	●	●	●	●	●	●	●	●	●
	040 ISO	040 ISO	0.40	0.23	0.02	0.8	0.4	●	●	●	●	●	●	●	●	●
	045 ISO	045 ISO	0.45	0.26	0.02	0.8	0.4	●	●	●	●	●	●	●	●	●
	050 ISO	050 ISO	0.50	0.29	0.03	0.6	0.4	●	●	●	●	●	●	●	●	●
	060 ISO	060 ISO	0.60	0.35	0.03	0.6	0.6	●	●	●	●	●	●	●	●	●
	070 ISO	070 ISO	0.70	0.40	0.04	0.6	0.6	●	●	●	●	●	●	●	●	●
	075 ISO	075 ISO	0.75	0.43	0.04	0.6	0.6	●	●	●	●	●	●	●	●	●
	080 ISO	080 ISO	0.80	0.46	0.04	0.6	0.6	●	●	●	●	●	●	●	●	●
	100 ISO	100 ISO	1.00	0.58	0.05	0.7	0.7	●	●	●	●	●	●	●	●	●
	125 ISO	125 ISO	1.25	0.72	0.07	0.8	0.9	●	●	●	●	●	●	●	●	●
	150 ISO	150 ISO	1.50	0.87	0.08	0.8	1.0	●	●	●	●	●	●	●	●	●
	175 ISO	175 ISO	1.75	1.01	0.10	0.9	1.1	●	●	●	●	●	●	●	●	●
ERM	16IR 035 ISO	16IL 035 ISO	0.35	0.20	0.02	0.8	0.3	●	●	●	●	●	●	●	●	●
	040 ISO	040 ISO	0.40	0.23	0.02	0.8	0.4	●	●	●	●	●	●	●	●	●
	045 ISO	045 ISO	0.45	0.26	0.02	0.8	0.4	●	●	●	●	●	●	●	●	●
	050 ISO	050 ISO	0.50	0.29	0.03	0.6	0.4	●	●	●	●	●	●	●	●	●
	060 ISO	060 ISO	0.60	0.35	0.03	0.6	0.6	●								

**W** 55°  
BSW,BSF,BSP,BSB

Thread Application: Pipe thread for industrial machinery



Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



(External Toolholder) : B69

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
[ER]	11ER A55 (ERM) AG55	0.5-1.5 0.5-2.5	48-10 48-10	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●
	16ER A55 (ERM) G55 AG55	0.5-1.5 0.5-3.0	48-16 48-8	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●
[EL]	11EL A55 AG55	0.5-1.5 0.5-2.5	48-10 48-10	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●
	16EL A55 G55 AG55	0.5-1.5 0.5-3.0	48-16 48-8	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●
[22ER]	22ER N55 (ERM)	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	●	●	●	●	●	●	●
[27ER]	27ER Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9	●	●	●	●	●	●	●

(Internal Toolholder) : B75-B77

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
[06IR]	06IR A55	0.5-1.25	48-20	3.97	6	0.05	0.6	0.6	●	●	●	●	●	●	●
	08IR A55	0.5-1.5	48-16	4.76	8	0.05	0.6	0.7	●	●	●	●	●	●	●
[11IR]	11IR A55 (IRM) AG55	0.5-1.5 0.5-2.5	48-16 48-10	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●
	16IR A55 (IRM) G55 AG55	0.5-1.5 0.5-3.0	48-16 48-8	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●
[22IR]	22IR N55 (IRM)	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	●	●	●	●	●	●	●
	27IR Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9	●	●	●	●	●	●	●

Application	Specification	Depth	Pitch	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860			
[11ER]	72 W (ERM) 60 W 56 W 48 W 40 W 36 W 32 W 28 W 26 W 24 W 22 W 20 W 19 W 18 W 16 W 14 W	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16	72 60 56 48 40 36 32 28 26 24 22 20 19 18 16 14	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16	6.35	11	0.02 0.02 0.02 0.04 0.06 0.07 0.09 0.09 0.10 0.11 0.13 0.14 0.15 0.16 0.18 0.21	0.7 0.7 0.7 0.6 0.6 0.6 0.6 0.7 0.8 0.8 0.9 0.9 1.0 1.0 1.1 1.2	●	●	●	●	●	●	●	●	●		
	[16ER]	72 W (ERM) 60 W 56 W 48 W 40 W 36 W 32 W 30 W 28 W 26 W 24 W 22 W 20 W 19 W 18 W 16 W 14 W 12 W 11 W 10 W 09 W 08 W	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.55 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16 1.36 1.48 1.63 1.81 2.03	72 60 56 48 40 36 32 30 28 26 24 22 20 19 18 16 14 12 11 10 9 8	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.55 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16 1.36 1.48 1.63 1.81 2.03	9.525	16	0.02 0.02 0.02 0.04 0.06 0.07 0.09 0.09 0.10 0.11 0.13 0.14 0.15 0.16 0.18 0.21 0.25 0.27 0.31 0.34 0.39	0.4 0.4 0.4 0.6 0.6 0.6 0.6 0.7 0.8 0.8 0.9 0.9 1.0 1.0 1.1 1.1 1.2 1.4 1.5 1.5 1.5 1.7	●	●	●	●	●	●	●	●	●	
		[22ER]	07 W (ERM) 06 W 05 W	2.32 2.71 3.25	7 6 5	12.7	22	0.45 0.52 0.65	1.6 1.6 1.7	2.3 2.3 2.4	●	●	●	●	●	●	●	●	
			[27ER]	4.5 W (ERM) 4 W	3.25 3.61	4.5 4	15.875	27	0.73 0.82	1.8 2.0	2.6 2.9	●	●	●	●	●	●	●	●

Application	Specification	Depth	Pitch	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860				
[06IR]	26 W 22 W 20 W 18 W	0.63 0.74 0.81 0.90	26 22 20 18	3.97	6	0.10 0.13 0.14 0.16	0.7 0.6 0.7 0.7	●	●	●	●	●	●	●	●	●				
	[08IR]	28 W 24 W 20 W 19 W 18 W 16 W	0.58 0.68 0.81 0.86 0.90 1.02	28 24 20 19 18 16	4.76	8	0.09 0.11 0.14 0.15 0.16 0.18	0.6 0.6 0.7 0.7 0.7 0.7	●	●	●	●	●	●	●	●	●			
		[11IR]	72 W (IRM) 60 W 56 W 48 W 40 W 36 W 32 W 28 W 26 W 24 W 22 W 20 W 19 W 18 W 16 W 14 W 12 W	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16 1.32	72 60 56 48 40 36 32 28 26 24 22 20 19 18 16 14 12	6.35	11	0.02 0.02 0.02 0.04 0.06 0.07 0.09 0.09 0.10 0.11 0.13 0.14 0.15 0.16 0.18 0.21	0.4 0.4 0.4 0.6 0.6 0.6 0.6 0.7 0.8 0.8 0.9 0.9 1.0 1.0 1.1 1.1 1.2	●	●	●	●	●	●	●	●			
			[16IR]	72 W (IRM) 60 W 56 W 48 W 40 W 36 W 32 W 30 W 28 W 26 W 24 W 22 W 20 W 19 W 18 W 16 W 14 W 12 W 11 W 10 W 09 W 08 W	0.23 0.27 0.29 0.34 0.41 0.45 0.51 0.55 0.58 0.63 0.68 0.74 0.81 0.86 0.90 1.02 1.16 1.36 1.48 1.63 1.81 2.03	72 60 56 48 40 36 32 30 28 26 24 22 20 19 18 16 14 12 11 10 9 8	9.525	16	0.02 0.02 0.02 0.04 0.06 0.07 0.09 0.09 0.10 0.11 0.13 0.14 0.15 0.16 0.18 0.21 0.25 0.27 0.31 0.34 0.39	0.4 0.4 0.4 0.6 0.6 0.6 0.6 0.7 0.8 0.8 0.9 0.9 1.0 1.0 1.1 1.1 1.2 1.4 1.5 1.5 1.5 1.7	●	●	●	●	●	●	●	●		
[22IR]				07 W (IRM) 06 W 05 W	2.32 2.71 3.25	7 6 5	12.7	22	0.45 0.52 0.65	1.6 1.6 1.7	2.3 2.3 2.4	●	●	●	●	●	●	●	●	
				[27IR]	4.5 W (IRM) 4 W	3.25 3.61	4.5 4	15.875	27	0.73 0.82	1.8 2.0	2.6 2.9	●	●	●	●	●	●	●	●

**TTX32R** (External Toolholder) AB26/B71  
B74 (Internal Toolholder)

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TTX32R 5501 5502	-	28-10 14-10	0.1 0.2	1.1 1.1	0.5 0.5	9.525 4.4	●	●	●	●	●	●	●	●

**TTX32L** (External Toolholder) AB26/B71  
B74 (Internal Toolholder)

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TTX32L 5501 5502	-	28-10 14-10	0.1 0.2	1.1 1.1	0.5 0.5	9.525 4.4	●	●	●	●	●	●	●	●

**VER..** (External Toolholder) B73

Application	Specification	Pitch	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
External thread processing	16VER AG55	48-8	-	0.07	16	3.65	9.525	4.0	●	●	●	●	●	●	●
	27VER V55 4W 3W 2.5W	4-2.5 4 3 2.5	-	0.88	27	8.7	15.87	6.35	●	●	●	●	●	●	●

**VNR..** (Internal Toolholder) B74

Application	Specification	Pitch	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Internal thread processing	16VNR AG55	48-8	-	0.08	16	3.65	9.525	4.0	●	●	●	●	●	●	●
	27VNR V55 4W 3W 2.5W	4-2.5 4 3 2.5	-	0.89	27	8.7	15.87	6.35	●	●	●	●	●	●	●

**TKFT..R..** (External Toolholder) : AB25/B72

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TKFT12R A55005 B55005	-	40-16 40-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	1	●	●	●	●	●	●	●
	TKFT16R A55005 B55005	-	40-16 40-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	2	●	●	●	●	●	●	●

**TKFT..L..** (External Toolholder) : AB25/B72

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TKFT12L A55005 B55005	-	40-16 40-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	1	●	●	●	●	●	●	●
	TKFT16L A55005 B55005	-	40-16 40-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	2	●	●	●	●	●	●	●

**TTP..FR..** (External Toolholder) : AB22

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TTP55 FR8A FR8B	-	48-16 48-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	1	●	●	●	●	●	●	●
	TTPA55 FR8A FR8B	-	48-16 48-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	2	●	●	●	●	●	●	●

**TTP..FL..** (External Toolholder) : AB22

Application	Specification	Pitch of Screw	Dimension (mm)	PCD	CBN-K	CBN-S	ZN60	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860
Thread processing	TTP55 FL8A FL8B	-	48-16 48-16	0.05 0.05	0.8 1.7	1.7 0.8	55°	1	●	●	●	●	●	●	●
	TTPA55 FL8A FL8B	-	48-16 												

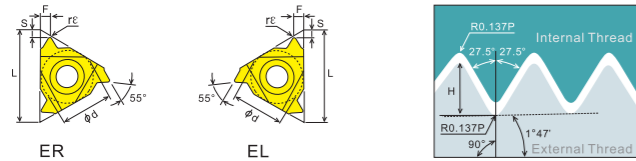






**BSPT** 55°

Thread Application: Air pipe / steam pipe / water pipe thread



(External Toolholder): B69

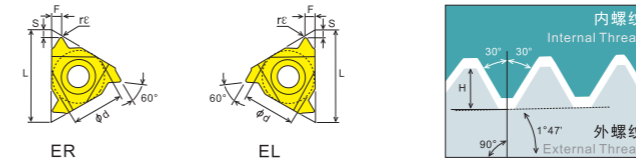
(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)						PCD											
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε	S	F	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860	
External thread processing	11ER 28BSPT (ERM)	11EL 28BSPT	0.58	28	6.35	11	0.11	0.6	0.6													
	19BSPT	19BSPT	0.86	19			0.16	0.8	0.9													
	14BSPT	14BSPT	1.16	14			0.21	0.9	1.0													
Internal thread processing	16ER 28BSPT (ERM)	16EL 28BSPT	0.58	28	9.525	16	0.11	0.6	0.6													
	19BSPT	19BSPT	0.86	19			0.16	0.8	0.9													
	14BSPT	14BSPT	1.16	14			0.21	1.0	1.2													

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD
P	Steel	●	●	●	●
M	Stainless Steel	●	●	●	●
K	Iron	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●

**NPT** 60°

Thread Application: Air pipe / steam pipe / water pipe thread



(External Toolholder): B69

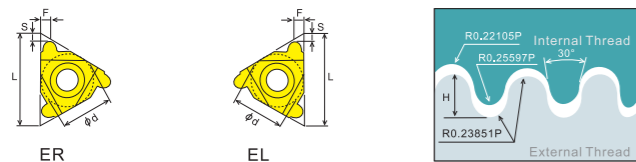
(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)						PCD											
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε	S	F	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860	
External thread processing	11ER 27 NPT (ERM)	11EL 27 NPT	0.66	27	6.35	11	0.04	0.7	0.8													
	18 NPT	18 NPT	1.01	18			0.06	0.8	1.0													
	14 NPT	14 NPT	1.33	14			0.07	0.8	1.0													
Internal thread processing	16ER 27 NPT (ERM)	16EL 27 NPT	0.66	27	9.525	16	0.04	0.7	0.8													
	18 NPT	18 NPT	1.01	18			0.06	0.8	1.0													
	14 NPT	14 NPT	1.33	14			0.07	0.9	1.2													

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD
P	Steel	●	●	●	●
M	Stainless Steel	●	●	●	●
K	Iron	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●

**RND** DIN405

Thread Application: For Fireproof pipe fittings and food industry



(External Toolholder): B69

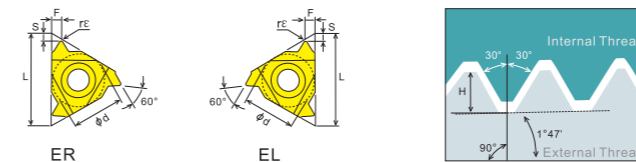
(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)						PCD											
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε	S	F	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860	
External thread processing	16ER 10 RND	16EL 10 RND	1.27	10	9.525	16	1.1	1.2														
	8 RND	8 RND	1.59	8			1.4	1.3														
	6 RND	6 RND	2.12	6			1.5	1.7														
Internal thread processing	22ER 6 RND	22EL 6 RND	2.12	6	12.7	22	1.5	1.7														
	4 RND	4 RND	3.18	4			2.2	2.3														
27ER 4 RND	27EL 4 RND	3.18	4	15.87	27	2.2	2.3															

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD
P	Steel	●	●	●	●
M	Stainless Steel	●	●	●	●
K	Iron	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●

**NPTF** 60°

Thread Application: Air pipe / steam pipe / water pipe thread



(External Toolholder): B69

(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)						PCD											
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε	S	F	CBN-K	CBN-S	ZN60	ZK01	ZM826	ZP15	ZP150	ZP680	ZM856	ZM860	
External thread processing	11ER 27 NPTF (ERM)	11EL 27 NPTF	0.64	27	6.35	11	0.04	0.7	0.8													
	18 NPTF	18 NPTF	1.00	18			0.04	0.8	1.0													
	14 NPTF	14 NPTF	1.35	14			0.04	0.8	1.0													
Internal thread processing	16ER 27 NPTF (ERM)	16EL 27 NPTF	0.64	27	9.525	16	0.04	0.7	0.8													
	18 NPTF	18 NPTF	1.00	18			0.04	0.8	1.0													
	14 NPTF	14 NPTF	1.35	14			0.04	0.9	1.2													

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD
P	Steel	●	●	●	●
M	Stainless Steel	●	●	●	●
K	Iron	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●

刀片

CN  
DN  
RN  
KN  
175  
SN  
TN  
VN  
WN

CC  
DC  
RC  
SC  
WB  
TB  
TC  
TP  
VB  
VC

TGF  
GBA  
T.N/E

CTP  
TKF

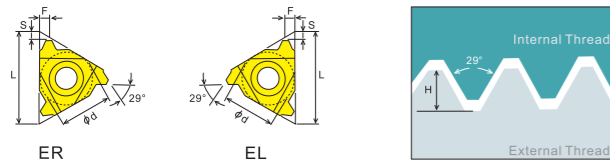
MG.  
MR.  
SP.  
GMM  
TDC

ABS  
TBP  
TKFB

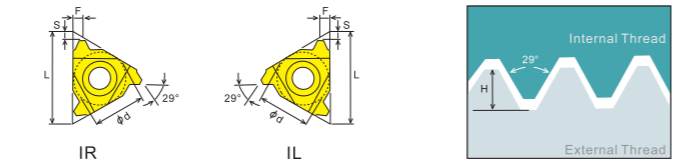
GER  
GR

**ACME** 29°

Thread Application: Trapezoidal thread for power transmission



Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



(External Toolholder): B69

Application	Specification		Depth	Pitch	Dimension (mm)							Material												
	[ER]	[EL]			Hmin	(tpi)	φd	L	rE	S	F	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860	
External thread processing	11ER 16 ACME	11EL 16 ACME	0.92	16	6.35	11	1.0	1.1																
	16ER 16 ACME (ERM)	16EL 16 ACME	0.92	16	1.03	14	1.0	1.1																
	12 ACME	12 ACME	1.19	12	9.525	16	1.1	1.2																
	10 ACME	10 ACME	1.52	10	1.3	14	1.3	1.4																
	8 ACME	8 ACME	1.84	8	1.4	15	1.4	1.5																
	6 ACME	6 ACME	2.37	6	1.7	19	1.7	1.9																
Internal thread processing	22ER 6 ACME (ERM)	22EL 6 ACME	2.37	6	12.7	22	1.8	2.1																
	5 ACME	5 ACME	2.79	5	2.0	2.3	2.0	2.3																
External thread processing	27ER 4 ACME	27EL 4 ACME	3.43	4	15.87	27	2.4	2.7																
	3 ACME	3 ACME	4.45	3	2.9	3.3	2.9	3.3																

(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)							Material												
	[IR]	[IL]			Hmin	(tpi)	φd	L	rE	S	F	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860	
External thread processing	11IR 16 ACME	11IL 16 ACME	0.92	16	6.35	11	0.9	0.9																
	16IR 16 ACME (IRM)	16IL 16 ACME	0.92	16	1.03	14	1.0	1.1																
	14 ACME	14 ACME	1.19	12	1.2	13	1.2	1.3																
	12 ACME	12 ACME	1.52	10	1.3	14	1.3	1.4																
	10 ACME	10 ACME	1.84	8	1.4	15	1.4	1.5																
	8 ACME	8 ACME	2.37	6	1.7	19	1.7	1.9																
Internal thread processing	22IR 6 ACME (IRM)	22IL 6 ACME	2.37	6	12.7	22	1.8	2.1																
	5 ACME	5 ACME	2.79	5	2.0	2.3	2.0	2.3																
External thread processing	27IR 4 ACME	27IL 4 ACME	3.43	4	15.87	27	2.3	2.6																
	3 ACME	3 ACME	4.45	3	2.9	3.3	2.9	3.3																

VER.. (External Toolholder) B73

SVER..

Application	Specification		Pitch	Dimension (mm)							Material													
	[VER]	[SVER]		(tpi)	H	rE	L	T	A	φd	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860		
External thread processing	22VER 6ACME	6ACME	6	0.2	22	4.9	12.7	5.1																
	5ACME	5ACME	5	0.25	22	4.9	12.7	5.1																
	4ACME	4ACME	4	0.3	22	4.9	12.7	5.1																
Internal thread processing	27VER 3.5ACME	3.5ACME	3.5	0.3	27	8.7	15.87	6.35																
	3ACME	3ACME	3	0.3	27	8.7	15.87	6.35																

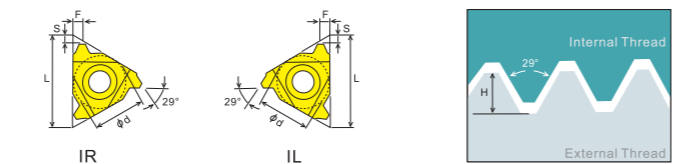
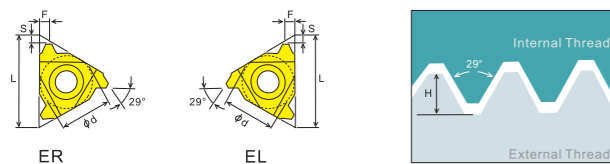
VNR.. (Internal Toolholder) B74

SVNR..

Application	Specification		Pitch	Dimension (mm)							Material													
	[VNR]	[SVNR]		(tpi)	H	rE	L	T	A	φd	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860		
External thread processing	22VNR 6ACME	6ACME	6	0.2	22	4.9	12.7	5.1																
	5ACME	5ACME	5	0.25	22	4.9	12.7	5.1																
	4ACME	4ACME	4	0.3	22	4.9	12.7	5.1																
Internal thread processing	27VNR 3.5ACME	3.5ACME	3.5	0.3	27	8.7	15.87	6.35																
	3ACME	3ACME	3	0.3	27	8.7	15.87	6.35																

**STUB ACME** 29°

Thread Application: Acme improved control valve forming thread



(External Toolholder): B69

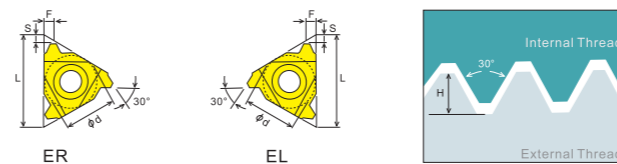
Application	Specification		Depth	Pitch	Dimension (mm)							Material												
	[ER]	[EL]			Hmin	(tpi)	φd	L	rE	S	F	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860	
External thread processing	11ER 16 STACME	11EL 16 STACME	0.60	16	6.35	11	1.0	1.0																
	16ER 16 STACME (ERM)	16EL 16 STACME	0.60	16	1.1	1.1	1.1	1.1																
	14 STACME	14 STACME	0.67	14	1.2	1.2	1.2	1.2																
	12 STACME	12 STACME	0.76	12	1.2	1.2	1.2	1.3																
	10 STACME	10 STACME	1.02	10	1.2	1.3	1.2	1.3																
	8 STACME	8 STACME	1.21	8	1.4	1.5	1.4	1.5																
Internal thread processing	22ER 6 STACME (ERM)	22EL 6 STACME	1.52	6	12.7	22	1.7	1.8																
	5 STACME	5 STACME	1.78	5	2.1	2.3	2.1	2.3																
External thread processing	27ER 4 STACME	27EL 4 STACME	2.16	4	15.87	27	2.3	2.4																
	3 STACME	3 STACME	2.79	3	2.9	2.9	2.9	2.9																

(Internal Toolholder): B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)							Material												
	[IR]	[IL]			Hmin	(tpi)	φd	L	rE	S	F	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860	
External thread processing	11IR 16 STACME	11IL 16 STACME	0.60	16	6.35	11	1.0	1.0																
	16IR 16 STACME (IRM)	16IL 16 STACME	0.60	16	1.1	1.1	1.1	1.1																
	14 STACME	14 STACME	0.67	14	1.2	1.2	1.2	1.2																
	12 STACME	12 STACME	0.76	12	1.2	1.3	1.2	1.3																
	10 STACME	10 STACME	1.02	10	1.2	1.3	1.2	1.3																
	8 STACME	8 STACME	1.21	8	1.4	1.5	1.4	1.5																
Internal thread processing	22IR 6 STACME (IRM)	22IL 6 STACME	1.52	6	12.7	22	1.7	1.8																
	5 STACME	5 STACME	1.78	5	2.1	2.3	2.1	2.3																
External thread processing	27IR 4 STACME	27IL 4 STACME	2.16	4	15.87	27	2.3	2.4																
	3 STACME	3 STACME	2.79	3	2.9	2.9	2.9	2.9																

**TR** 30°  
DIN103

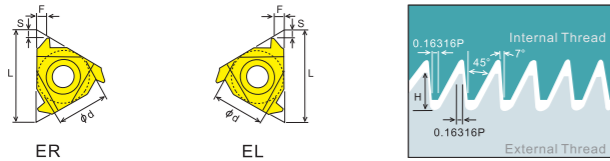
Thread Application: Trapezoidal thread for power transmission



Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZM826	ZP150	ZP150	ZP680	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●											

**ABUT** 45°+7°

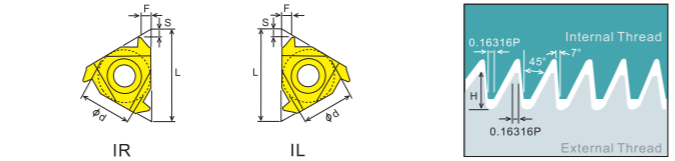
Thread Application: One way force is large, and the thread for power transmission



ER

EL

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●



IR

IL

(External Toolholder) : B69

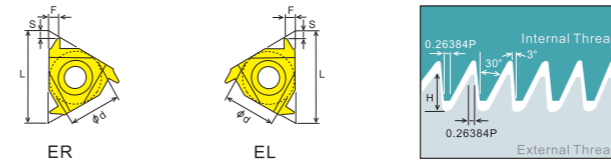
Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε											S
External thread processing	11ER 20 ABUT	11EL 20 ABUT	0.84	20					1.0	1.4										
	16ABUT	16ABUT	1.05	16	6.35	11			1.3	1.9										
Internal thread processing	16ER 20 ABUT	16EL 20 ABUT	0.84	20					1.0	1.4										
	12ABUT	12ABUT	1.05	16			9.525	16	1.3	1.9										
	10ABUT	10ABUT	1.40	12					1.4	2.0										
Internal thread processing	22ER 8 ABUT	22EL 8 ABUT	2.10	8	12.7	22			2.0	3.2										
	6ABUT	6ABUT	2.80	6					2.2	3.5										

(Internal Toolholder) : B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ IR ]	[ IL ]			Hmin	(tpi)	φd	L	rε											S
External thread processing	11IR 20 ABUT	11IL 20 ABUT	0.84	20					1.0	1.4										
	16ABUT	16ABUT	1.05	16	6.35	11			1.3	1.9										
Internal thread processing	16IR 20 ABUT	16IL 20 ABUT	0.84	20					1.0	1.4										
	12ABUT	12ABUT	1.05	16			9.525	16	1.3	1.9										
	10ABUT	10ABUT	1.40	12					1.4	2.0										
Internal thread processing	22IR 8 ABUT	22IL 8 ABUT	2.10	8	12.7	22			2.0	3.2										
	6ABUT	6ABUT	2.80	6					2.2	3.5										

**SAGE** 30°+3°

Thread Application: One way force is large, and the thread for power transmission



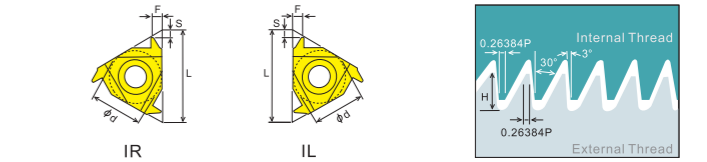
ER

EL

(External Toolholder) : B69

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ ER ]	[ EL ]			Hmin	(mm)	φd	L	rε											S
External thread processing	16ER 2.0 SAGE	16EL 2.0 SAGE	1.74	2.0	9.525	16			1.47	2.08										
	22ER 2.0 SAGE	22EL 2.0 SAGE	1.74	2.0			12.7	22	1.47	2.08										
Internal thread processing	3.0 SAGE	3.0 SAGE	2.60	3.0					1.79	2.60										
	4.0 SAGE	4.0 SAGE	3.55	4.0					1.93	3.20										

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●



IR

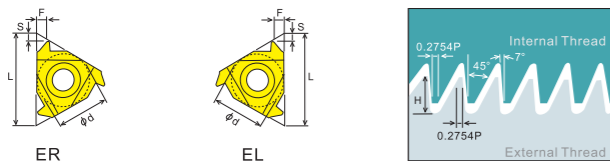
IL

(Internal Toolholder) : B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ IR ]	[ IL ]			Hmin	(mm)	φd	L	rε											S
External thread processing	16IR 2.0 SAGE	16IL 2.0 SAGE	1.50	2.0	9.525	16			1.52	2.2										
	22IR 3.0 SAGE	22IL 3.0 SAGE	2.25	3.0			12.7	22	1.66	2.9										
Internal thread processing	4.0 SAGE	4.0 SAGE	3.09	4.0					2.12	3.2										

**BBUT** 45°+7°

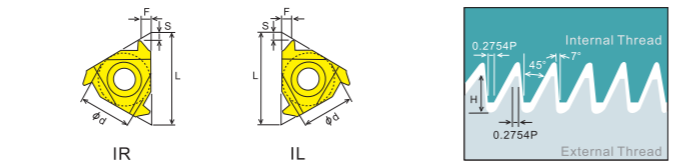
Thread Application: One way force is large, and the thread for power transmission



ER

EL

Material	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting	PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860
P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
M	Stainless Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
K	Iron	●	●	●	●	●	●	●	●	●	●	●	●	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	●	●	●	●	●	●	●	●	●	●	●	●
S	Carbide/Powder Metallurgy	●	●	●	●	●	●	●	●	●	●	●	●	●
H	Titanium/Superalloy/Carbon Fiber	●	●	●	●	●	●	●	●	●	●	●	●	●



IR

IL

(External Toolholder) : B69

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ ER ]	[ EL ]			Hmin	(tpi)	φd	L	rε											S
External thread processing	16ER 16 BBUT	16EL 16 BBUT	0.80	16					1.1	1.6										
	12BBUT	12BBUT	1.07	12					1.4	2.1										
	10BBUT	10BBUT	1.28	10			9.525	16	1.4	2.2										
Internal thread processing	8BBUT	8BBUT	1.61	8					1.6	2.5										
	22ER 8 BBUT	22EL 8 BBUT	1.61	8	12.7	22			1.6	2.5										

(Internal Toolholder) : B75-B77

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ IR ]	[ IL ]			Hmin	(tpi)	φd	L	rε											S
External thread processing	16IR 16 BBUT	16IL 16 BBUT	0.80	16					1.1	1.6										
	12BBUT	12BBUT	1.07	12			9.525	16	1.4	2.1										
	10BBUT	10BBUT	1.28	10					1.4	2.2										
Internal thread processing	8BBUT	8BBUT	1.61	8					1.6	2.5										
	22IR 8 BBUT	22IL 8 BBUT	1.61	8	12.7	22			1.6	2.5										

**UER..**

External thread processing

B70 (External Toolholder)

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ U ]	[ U ]			Hmin	(mm)	φd	L	rε											A
External thread processing	22UER 5.0 SAGE	5.0 SAGE	5.0	5.1	22				0.62	12.7	11.0									
	6.0 SAGE	6.0 SAGE	6.0	6.0					0.75											

**UIR..**

Internal thread processing

B70 (Internal Toolholder)

Application	Specification		Depth	Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860	
	[ U ]	[ U ]			Hmin	(mm)	φd	L	rε											A
Internal thread processing	22UIR 5.0 SAGE	5.0 SAGE	5.0	5.1	22				0.62	12.7	11.0									
	6.0 SAGE	6.0 SAGE	6.0	6.0					0.75											

**VER..**

External thread processing

B73 (External Toolholder)

Application	Specification		Pitch	Dimension (mm)					PCD	CBN-K	CBN-S	CBN-S	ZN60	ZM826	ZP15	ZP150	ZM856	ZM860
	[ VER ]	[ VER ]		H	rε	L	T	A										
External thread processing	27VER 8.0 SAGE	8.0 SAGE	8.0					0.8	27	8.7	15.87							







Cutting Environment ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Application	Product Image	Dimensioning	Specification	Dimension (mm)						Matching Toolholder	Cutting Environment							
				rE	A	B	T	L	a		P	M	K	N	S	H		
RPM			RT 070204R-81	0.4	6.4	4.3	2.38	1.3	1.5	(Toolholder) D19-D20	●	●	●	●	●	●		
			100304R-81	0.4	11	6.35	3.4	1.8	2.1		●	●	●	●	●	●		
			100308R-81	0.8	11	6.35	3.4	1.8	2.1		●	●	●	●	●	●		
RPM			XOMX 060208FR-E03	0.8	6.94	4.09	2.45			(Toolholder) D20	●	●	●	●	●	●		
			060208R-M05	0.8	6.94	4.09	2.45				●	●	●	●	●	●		
			090308FR-E05	0.8	10.8	6.35	3.65				●	●	●	●	●	●		
120408TR-M06	0.8	11.41	8.18	4.15				●	●	●	●	●	●					
RPM			AOMT 123602PEER-M	0.2						(Toolholder) D21	●	●	●	●	●	●		
			123604PEER-M	0.4							●	●	●	●	●	●		
			123608PEER-M	0.8								●	●	●	●	●	●	
			123612PEER-M	1.2	12	6.6	3.6					●	●	●	●	●	●	
			123616PEER-M	1.6								●	●	●	●	●	●	
			123620PEER-M	2.0								●	●	●	●	●	●	
123624PEER-M	2.4							●	●	●	●	●	●					
123632PEER-M	3.2							●	●	●	●	●	●					
RPM			SEET 09T308PER-PF	0.8	9.525	9.525	4.01			(Toolholder) D22	●	●	●	●	●	●		
			09T308PER-PM	0.8	9.525	9.525	4.01				●	●	●	●	●	●		
			09T308PER-PR	0.8	9.525	9.525	4.01				●	●	●	●	●	●		
120308PER-PF	0.8	13.308	13.308	4.04				●	●	●	●	●	●					
120308PER-PM	0.8	13.308	13.308	4.04				●	●	●	●	●	●					
120308PER-PR	0.8	13.308	13.308	4.04				●	●	●	●	●	●					
RPM			APET 120202SR	0.2	12.7	7.938	2.5		11°	(Toolholder) D23, D47	●	●	●	●	●	●		
			120204SR	0.4	12.7	7.938	2.5		11°		●	●	●	●	●	●		
			120208SR	0.8	12.7	7.938	2.5		11°		●	●	●	●	●	●		
			APNT 120208SR	0.8	12.7	7.938	2.5		11°		●	●	●	●	●	●		
			ADET 160302SR	0.2	15.875	9.525	3.18		15°		●	●	●	●	●	●		
			160304SR	0.4	15.875	9.525	3.18		15°		●	●	●	●	●	●		
160308SR	0.8	15.875	9.525	3.18		15°	●	●	●	●	●	●						
ADNT 160308SR	0.8	15.875	9.525	3.18		15°	●	●	●	●	●	●						
RPM			AXMT 0602PER-EM	0.2	6	4.15	2.6	1.0	5.75	(Toolholder) D24	●	●	●	●	●	●		
			060204R-EM	0.4	6	4.15	2.6	1.0	5.75		●	●	●	●	●	●		
			060208R-EM	0.8	6	4.15	2.6	1.0	5.75		●	●	●	●	●	●		
			060216R-EM	1.6	6	4.15	2.6	1.0	5.75		●	●	●	●	●	●		
RPM			AXMT 0903PER-ML	0.4	9.5	6.21	3.6	1.4	8.8	(Toolholder) D24	●	●	●	●	●	●		
			0903PER-EML	0.4	9.5	6.21	3.6	0.84	8.8		●	●	●	●	●	●		
			090308R-EML	0.8	9.5	6.21	3.6	-	8.8		●	●	●	●	●	●		
			090316R-ML	1.6	9.5	6.21	3.6	-	8.8		●	●	●	●	●	●		
			090320R-EML	2.0	9.5	6.21	3.6	-	8.8		●	●	●	●	●	●		
			090332R-EML	3.2	9.5	6.21	3.6	-	8.8		●	●	●	●	●	●		
RPM			AXCT 060202R-AL	0.2	6	4.15	2.6	0.83	5.75	(Toolholder) D24	●	●	●	●	●	●		
			060204R-AL	0.4	6	4.15	2.6	0.83	5.75		●	●	●	●	●	●		
			0903PER-AL	0.4	9.5	6.21	3.6	0.83	8.8		●	●	●	●	●	●		
Special for Aluminum													●	●	●	●	●	●
RPM			TPKN 110304	0.4	11	6.35	3.18			(Toolholder) D25, D45	●	●	●	●	●	●		
			110308	0.8	11	6.35	3.18				●	●	●	●	●	●		
			160304	0.4	16.5	9.525	3.18				●	●	●	●	●	●		
			160308	0.8	16.5	9.525	3.18				●	●	●	●	●	●		
			220404	0.4	22	12.7	4.76				●	●	●	●	●	●		
			220408	0.8	22	12.7	4.76				●	●	●	●	●	●		
220412	1.2	22	12.7	4.76			●	●	●	●	●	●						
2204PDR	-	22	12.7	4.76			●	●	●	●	●	●						
RPM			TPMR 090204	0.4	9.6	5.56	2.38			(Toolholder) D25, D45	●	●	●	●	●	●		
			110304	0.4	11	6.35	3.18				●	●	●	●	●	●		
			110308	0.8	11	6.35	3.18				●	●	●	●	●	●		
			160304	0.4	16.5	9.525	3.18				●	●	●	●	●	●		
			160308	0.8	16.5	9.525	3.18				●	●	●	●	●	●		
			160312	1.2	16.5	9.525	3.18				●	●	●	●	●	●		
220412	1.2	22	12.7	4.76			●	●	●	●	●	●						
330916	1.6	33	19.05	9.52			●	●	●	●	●	●						

Cutting Environment ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Application	Product Image	Dimensioning	Specification	Dimension (mm)						Matching Toolholder	Cutting Environment					
				rE	A	B	T	L	a		P	M	K	N	S	H
RPM			RPGT 08T2-AL	4	8			2.78	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1003-AL	5	10			3.15	11°		●	●	●	●	●	●
			10T3-AL	5	10			3.97	11°		●	●	●	●	●	●
1204-AL	6	12			4.76	11°	●	●	●	●	●	●				
RPM			RPEW 0802MO	4	8			2.38	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1003MO	5	10			3.15	11°		●	●	●	●	●	●
			1003MO-DU	5	10			3.97	11°		●	●	●	●	●	●
1204MOF	6	12			4.76	11°	●	●	●	●	●	●				
RPM			RPKT 10T3MOF	5	10			3.97	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1204MOF	6	12			4.76	11°		●	●	●	●	●	●
RPM			RPKT 10T3MOT	5	10			3.97	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1204MOT	6	12			4.76	11°		●	●	●	●	●	●
RPM			RPMT 08T2MOE-JS	4	8			2.78	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1003MOE-JS	5	10			3.18	11°		●	●	●	●	●	●
			10T3MOE-JS	5	10			3.97	11°		●	●	●	●	●	●
			1204MOE-JS	6	12			4.76	11°		●	●	●	●	●	●
RPM			RPMT 10T3MO-DU	5	10			3.97	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			1204MO-DU	6	12			4.76	11°		●	●	●	●	●	●
RPM			RPMT 08T2MO-GH	4	8			2.78	11°	(Toolholder) D29-D30	●	●	●	●	●	●
			10T3MO-GH	5	10			3.97	11°		●	●	●	●	●	●
			1204MO-GH	6	12			4.76	11°		●	●	●	●	●	●
RPM			RCGT 0602-AL	3	6			2.38	7°	(Toolholder) D32	●	●	●	●	●	●
			0803-AL	4	8			3.15	7°		●	●	●	●	●	●
			1003-AL	5	10			3.15	7°		●	●	●	●	●	●
			10T3-AL	5	10			3.97	7°		●	●	●	●	●	●
1204-AL	6	12			4.76	7°	●	●	●	●	●	●				
RPM			RCKT 10T3MO-PM	5	10			3.97	7°	(Toolholder) D32	●	●	●	●	●	●
			1204MO-PM	6	12			4.76	7°		●	●	●	●	●	●
			1606MO-PM	8	16			6.35	7°		●	●	●	●	●	●
			2006MO-PM	10	20			6.35	7°		●	●	●	●	●	●
RPM			RCKT 10T3MO-PR	5	10			3.97	7°	(Toolholder) D32	●	●	●	●	●	●
			1204MO-PR	6	12			4.76	7°		●	●	●	●	●	●
			1606MO-PR	8	16			6.35	7°		●	●	●	●	●	●
			2006MO-PR	10	20			6.35	7°		●	●	●	●	●	●

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Cutting Environment ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Application	Product Image	Dimensioning	Specification	Dimension (mm)					Matching Toolholder	PCD CBN-K CBN-S ZM60 ZM60 ZC32S ZP201 ZP150 ZP132 ZP153 ZP163
				rE	A	B	T	L		
P	Steel									●●●●●●●●●●
M	Stainless Steel									●●●●●●●●●●
K	Iron									●●●●●●●●●●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood									●●●●●●●●●●
S	Carbide/Powder Metallurgy									●●●●●●●●●●
H	Titanium/Superalloy/Carbon Fiber									●●●●●●●●●●
Region: Asia			RCMT 0803MO 1003MO 10T3MO 1204MO 1606MO 2006MO	4 5 5 6 8 10	8 10 10 12 16 20		3.18 3.18 3.97 4.76 6.35 6.35	7° 7° 7° 7° 7° 7°	(Toolholder) D32	●●●●●●●●●●
Region: Asia			RCMX 0803MO 1003MO 10T3MO 1204MO 1606MO 2006MO 2507MO 3209MO	4 5 5 6 8 10 12.5 16	8 10 10 12 16 20		3.18 3.18 3.97 4.76 6.35 6.35 7.94 9.52	7° 7° 7° 7° 7° 7° 7° 7°	(Toolholder) D32	●●●●●●●●●●
Region: Asia			RDKW 0501MO 0702MO 0803MO 10T3MO 1204MO 1604MO 1605MO 1606MO 2006MO	2.5 3.5 4 5 6 8 8 8 10	5 7 8 10 12 16 16 20		1.59 2.38 3.15 3.97 4.76 4.76 5.56 6.35 6.35	15° 15° 15° 15° 15° 15° 15° 15° 15°	(Toolholder) D34-D35	●●●●●●●●●●
Region: Asia			RDKX 10T3MO 1204MO 1605MO	5 6 8 10	10 12 16 20		3.97 4.76 6.35 6.35	15° 15° 15° 15°	(Toolholder) D34-D35	●●●●●●●●●●
Region: Asia			RDKX 10T3MP-1 1204MP-1	5 6	10 12		3.97 4.76	15° 15°	(Toolholder) D34-D35	●●●●●●●●●●
Region: Asia			RDMW 10T3MOT-PM 1204MOT-PM 1605MOT-PM	5 6 8	10 12 16		3.97 4.76 5.56	15° 15° 15°	(Toolholder) D34-D35	●●●●●●●●●●
Region: Asia			RDMT 10T3MO 1204MO	5 6	10 12		3.97 4.76	15° 15°	(Toolholder) D34-D35	●●●●●●●●●●
Region: Europe			RNGJ 1204M0ELD 1204M0SGD 1204M0SHD	6	12		4.75		(Toolholder) D36	●●●●●●●●●●
Region: Europe			ZCET 080CE 主刃 ZCET 100CE ZCEW 100CE ZCET 125CE ZCEW 125CE ZCET 150CE ZCEW 150CE ZCET 160CE ZCEW 160CE ZCET 200CE ZCET 080SE 副刃 ZCET 100SE ZCEW 100SE ZCET 125SE ZCEW 125SE ZCET 150SE ZCEW 150SE ZCET 160SE ZCEW 160SE ZCET 200SE CPMT 080204 外周刃 CPMT 090308	8 10 10 12.5 12.5 15 15 16 16 20 8 10 10 12.5 12.5 15 15 16 16 20 0.4 0.8	15.6 18.3 18.3 23.1 23.1 23.3 28.3 28.8 35.4 16.8 16.7 16.7 23.8 20.8 25.7 25.7 26.3 31.9 7.94 9.525	7.9 10 10 12.3 12.3 14.9 14.9 15.4 20.1 5.9 8.1 8.1 9.3 9.3 11.8 11.8 12.4 15.7 7.94 3.18	3.97 4.74 4.74 6.1 6.1 7.59 7.59 7.45 8.0 3.43 4.24 4.24 5.4 5.4 7.09 7.09 6.96 7.0 2.38 3.18		(Toolholder) D37	●●●●●●●●●●

Cutting Environment ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Application	Product Image	Dimensioning	Specification	Dimension (mm)					Matching Toolholder	PCD CBN-K CBN-S ZM60 ZK01 ZC32S ZP150 ZP152 ZP153 ZP163	
				rE	A	B	T	L			a
Region: Europe			SWB 216HM 主刃 220HM 225HM 230HM 232HM 240HM 250HM 216HS 副刃 220HS 225HS 230HS 232HS 240HS 250HS	8 10 12.5 15 16 20 25	15 15.8 18.5 22.2 26 30.4 34.4	7.9 9.9 12.4 14.8 16 20.8 25.7	3 3.65 3.8 5.35 5.35 6.85 7			(Toolholder) D38	●●●●●●●●●●
Region: Europe			SPGA 090304 外周刃 SPMA 090304 IM-SP 32GS ZCMT 100308R ZPMT 100308ZER	0.4 0.8 0.8 0.8 0.8	9.525 9.525 9.525 10.4 10	9.525 9.525 9.525 6.35 6	3.18 3.18 3.18 3.4 3.2				●●●●●●●●●●
Region: Europe			ZPFG 080 100 120 160 200 250 300 320	4 5 6 8 10 12.5 15 16	8 10 12 16 20 25 30 32	9.7 12.1 14.6 16.6 20.3 24.1 29.2 30.2	2.1 2.7 3.2 4.2 5.2 6.2 7.2 7.2		(Toolholder) D39	●●●●●●●●●●	
Region: Europe			ZCFW 080-R0.3 100-R0.3 100-R0.5 100-R1.0 120-R0.3 120-R0.5 120-R1.0 160-R0.3 160-R0.5 160-R1.0 160-R1.5 160-R2.0 200-R0.3 200-R0.5 200-R1.0 200-R1.5 200-R2.0 250-R0.3 250-R0.5 250-R1.0 250-R1.5 250-R2.0 300-R0.3 300-R0.5 300-R1.0 320-R0.3 320-R0.5 320-R1.0	0.3 0.3 0.5 1.0 0.3 0.5 1.0 0.3 0.5 1.0 1.5 2.0 0.3 0.5 1.0 1.5 2.0 0.3 0.5 1.0 1.5 2.0 0.3 0.5 1.0 0.3 0.5 1.0	8 10 10 12 12 12 16 16 16 16 16 16 16 16 16 16 16 16 25 25 25 25 25 30 30 30 32 32 32	9.7 12.1 12.1 12.1 14.6 14.6 14.6 16.6 16.6 16.6 16.6 16.6 16.6 19.9 19.9 19.9 19.9 22.6 22.6 22.6 22.6 22.6 27.2 27.2 27.2 28.2 28.2 28.2	2.1 2.7 2.7 2.7 3.2 3.2 3.2 4.2 4.2 4.2 4.2 4.2 5.2 5.2 5.2 5.2 6.2 6.2 6.2 6.2 6.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2		(Toolholder) D39	●●●●●●●●●●	
Region: Europe			BNM 060 070 080 100 110 120 160 200 250 300 320	3 3.5 4 5 5.5 6 8 10 12.5 15 16	6 7 10 11 12 16 20 25 30 32	5 5.5 8.5 9 10 12 15 18.5 22.5 23.5	2 2.4 2.6 3 3 4 5 6 7 7		(Toolholder) D40	●●●●●●●●●●	
Region: Europe			P3200-D08 D10 D12 D16 D20 D25 D30 D32	4 5 6 8 10 12.5 15 16	8 10 12 16 20 25 30 32	7 8.5 10 12 15 18.5 22.5 23.5	2.4 2.6 3 4 5 6 7 7		(Toolholder) D42	●●●●●●●●●●	

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