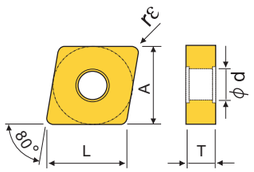
CN.. inserts

CN



(mm)

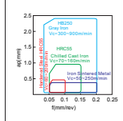
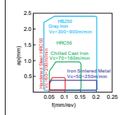
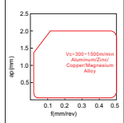
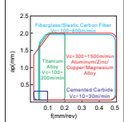
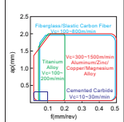
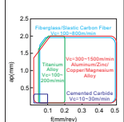
Model	A	T	ϕd
CN..0903..	9.525	3.18	3.81
CN..1204..	12.70	4.76	5.16
CN..1606..	15.875	6.35	6.35
CN..1906..	19.05	6.35	7.94
CN..2509..	25.4	9.52	9.2

Cutting Speed: m/min^{-1}

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel HRC46-58			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy HB50-70	300-1500					300-1500								
	Hardened Aluminum Alloy HB70-110	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1600								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

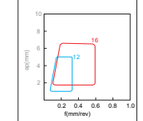
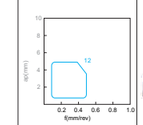
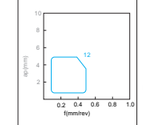
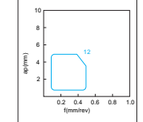
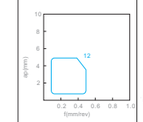
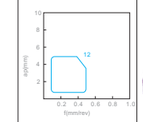
Cutting Environment ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			CNGA 120402	12.6	0.2	●	●												
			120404	12.4	0.4	●	●												
			120408	12.0	0.8	●	●												
			120412	11.6	1.2	●	●												
Finishing			CNGA 120402-T10	12.6	0.2	●	●												
			120404-T10	12.4	0.4	●	●												
			120408-T10	12.0	0.8	●	●												
			120412-T10	11.6	1.2	●	●												
Finishing			CNMG 120402	12.6	0.2	●													
			120404	12.4	0.4	●													
			120408	12.0	0.8	●													
			120412	11.6	1.2	●													
Finishing			CNMG 120402-T11	12.6	0.2	●													
			120404-T11	12.4	0.4	●													
			120408-T11	12.0	0.8	●													
			120412-T11	11.6	1.2	●													
Finishing			CNGW 120402	12.6	0.2	●													
			120404	12.4	0.4	●													
			120408	12.0	0.8	●													
			120412	11.6	1.2	●													
Finishing			CNMG 120402-T10	12.6	0.2	●													
			120404-T10	12.4	0.4	●													
			120408-T10	12.0	0.8	●													
			120412-T10	11.6	1.2	●													

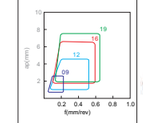
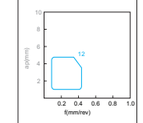
Cutting Environment ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			CNMG 120404-T12	12.4	0.4		●					●	●			
			120408-T12	12.0	0.8		●					●	●			
			120412-T12	11.6	1.2		●					●	●			
Finishing			CNMG 120404-T13	12.4	0.4	●										
			120408-T13	12.0	0.8	●										
			120412-T13	11.6	1.2	●										
Finishing			CNMG 090304-T14	9.2	0.4		●	●		●						
			090308-T14	8.8	0.8		●	●		●						
			120404-T14	12.4	0.4		●	●		●						
			120408-T14	12.0	0.8		●	●		●						
			120412-T14	11.6	1.2		●	●		●						
Finishing			CNMG 090304-T15	9.2	0.4					●		●				
			090308-T15	8.8	0.8					●		●				
			120404-T15	12.4	0.4					●		●				
			120408-T15	12.0	0.8					●		●				
Finishing			CNMG 090304-T16	9.2	0.4					●		●				
			090308-T16	8.8	0.8					●		●				
			120404-T16	12.4	0.4					●		●				
			120408-T16	12.0	0.8					●		●				
Semi-Finishing			CNMG 120404-T17	12.4	0.4	●		●		●		●		●		
			120408-T17	12.0	0.8	●		●		●		●		●		
			120412-T17	11.6	1.2	●		●		●		●		●		

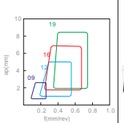
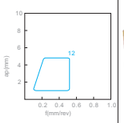
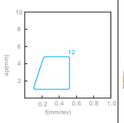
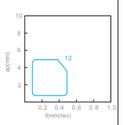
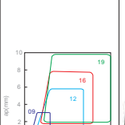
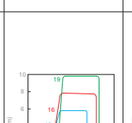
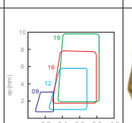
Cutting Environment ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	◐	●		✕	◐	✕	◐	◐	●		
M	Stainless Steel	◐	○				✱	◐	◐	○		
K	Iron	◐	●				✕			✕	◐	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood				◐							
S	Titanium/Superalloy/Carbon Fiber							✕	◐	●		
H	Carbide/Powder Metallurgy							✕	◐	●		

Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			CNMG 090304-T18	9.2	0.4				●	●		●				
			090308-T18	8.8	0.8				●	●		●				
			120404-T18	12.4	0.4				●	●		●				
			120408-T18	12.0	0.8				●	●		●				
			120412-T18	11.6	1.2				●	●		●				
			120416-T18	11.2	1.6				●	●		●				
			160608-T18	15.3	0.8				●	●		●				
			160612-T18	14.8	1.2				●	●		●				
			160616-T18	14.4	1.6				●	●		●				
			190608-T18	18.5	0.8				●	●		●				
			190612-T18	18.1	1.2				●	●		●				
			190616-T18	17.7	1.6				●	●		●				
Semi-Finishing			CNMG 120404-T19	12.4	0.4	●			●	●	●	●	●	●		
			120408-T19	12.0	0.8		●		●	●	●	●	●	●		
			120412-T19	11.6	1.2			●	●	●	●	●	●	●		
Semi-Finishing – Roughing			CNMG 120404-T20	12.4	0.4							●	●			
			120408-T20	12.0	0.8							●	●			
			120412-T20	11.6	1.2							●	●			
			160608-T20	15.3	0.8							●	●			
			160612-T20	14.8	1.2							●	●			
			160616-T20	14.4	1.6							●	●			
Semi-Finishing			CNMG 120404-T21	12.4	0.4	●			●			●				
			120408-T21	12.0	0.8		●		●			●				
			120412-T21	11.6	1.2			●	●			●				
Semi-Finishing			CNMG 120404-T22	12.4	0.4	●						●				
			120408-T22	12.0	0.8		●					●				
			120412-T22	11.6	1.2			●				●				
Semi-Finishing			CNMG 120404-T23	12.4	0.4				●	●	●	●	●	●		
			120408-T23	12.0	0.8				●	●	●	●	●	●		
			120412-T23	11.6	1.2				●	●	●	●	●	●		
Semi-Finishing			CNMG 120404-T24	12.4	0.4				●	●	●	●	●	●		
			120408-T24	12.0	0.8				●	●	●	●	●	●		
			120412-T24	11.6	1.2				●	●	●	●	●	●		
Semi-Finishing			CNMG 120404-T25	12.4	0.4							●	●			
			120408-T25	12.0	0.8							●	●			
			120412-T25	11.6	1.2							●	●			

Cutting Environment ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	◐	●		✕	◐	✕	◐	◐	●		
M	Stainless Steel	◐	○				✱	◐	◐	○		
K	Iron	◐	●				✕			✕	◐	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood				◐							
S	Titanium/Superalloy/Carbon Fiber							✕	◐	●		
H	Carbide/Powder Metallurgy							✕	◐	●		

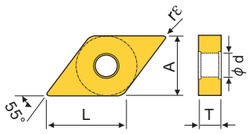
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			CNMG 090304-T26	9.2	0.4				●	●	●	●		●		
			090308-T26	8.8	0.8				●	●	●	●		●		
			120404-T26	12.4	0.4				●	●	●	●		●		
			120408-T26	12.0	0.8				●	●	●	●		●		
			120412-T26	11.6	1.2				●	●	●	●		●		
			120416-T26	11.2	1.6				●	●	●	●		●		
			160608-T26	15.3	0.8				●	●	●	●		●		
			160612-T26	14.8	1.2				●	●	●	●		●		
			160616-T26	14.4	1.6				●	●	●	●		●		
			160620-T26	14.0	2.0				●	●	●	●		●		
			160630-T26	13.0	3.0				●	●	●	●		●		
			190608-T26	18.5	0.8				●	●	●	●		●		
			190612-T26	18.1	1.2				●	●	●	●		●		
			190616-T26	17.7	1.6				●	●	●	●		●		
Semi-Finishing			CNMG 120404R-T27	12.4	0.4				●		●					
			120408R-T27	12.0	0.8				●		●					
			120412R-T27	11.6	1.2				●		●					
Semi-Finishing – Roughing			CNMG 120404L-T27	12.4	0.4				●		●					
			120408L-T27	12.0	0.8				●		●					
			120412L-T27	11.6	1.2				●		●					
Semi-Finishing			CNMG 120404-T28	12.4	0.4				●	●	●	●	●	●		
			120408-T28	12.0	0.8				●	●	●	●	●	●		
			120412-T28	11.6	1.2				●	●	●	●	●	●		
Roughing			CNMA 090304	9.2	0.4		●						●	●		
			090308	8.8	0.8		●						●	●		
			120404	12.4	0.4		●						●	●		
			120408	12.0	0.8		●						●	●		
			120412	11.6	1.2		●						●	●		
			120416	11.2	1.6		●						●	●		
			160608	15.3	0.8		●						●	●		
			160612	14.8	1.2		●						●	●		
			160616	14.4	1.6		●						●	●		
			160620	14.0	2.0		●						●	●		
			160630	13.0	3.0		●						●	●		
			190608	18.5	0.8		●						●	●		
			190612	18.1	1.2		●						●	●		
			190616	17.7	1.6		●						●	●		
Roughing			CNMG 120408-T29	12.0	0.8		●	●		●			●			
			120412-T29	11.6	1.2		●	●		●			●			
			120416-T29	11.2	1.6		●	●		●			●			
			160608-T29	15.3	0.8		●	●		●			●			
			160612-T29	14.8	1.2		●	●		●			●			
			160616-T29	14.4	1.6		●	●		●			●			
			190608-T29	18.5	0.8		●	●		●			●			
			190612-T29	18.1	1.2		●	●		●			●			
			190616-T29	17.7	1.6		●	●		●			●			
			190624-T29	16.9	2.4		●	●		●			●			
Heavy Cutting-Roughing			CNMM 120412-T29	11.6	1.2		●	●		●						
			160608-T29	15.3	0.8		●	●		●						
			160612-T29	14.8	1.2		●	●		●						
			160616-T29	14.4	1.6		●	●		●						
			190612-T29	18.1	1.2		●	●		●						
			190616-T29	17.7	1.6		●	●		●						
			190624-T29	16.9	2.4		●	●		●						
			250924-T29	25.8	2.4		●	●		●						

DN

DN.. Double Sided Cutting Edge Inserts

(mm)

Model	A	T	ϕd
DN..1104..	9.525	4.76	3.81
DN..1504..	12.70	4.76	5.16
DN..1506..	12.70	6.35	5.16
DN..1906..	15.90	6.35	7.94

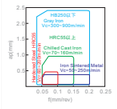
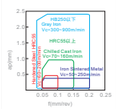
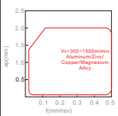
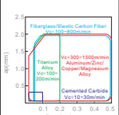
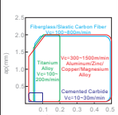
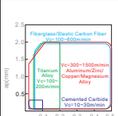


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

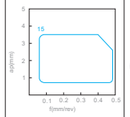
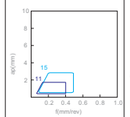
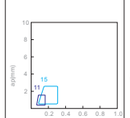
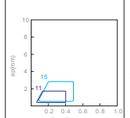
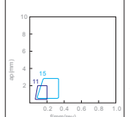
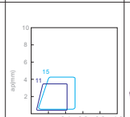
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			DNGA 110402	11.4	0.2	●	●												
			110404	11.2	0.4	●	●												
			110408	10.8	0.8	●	●												
			150402	15.3	0.2	●	●												
			150404	15.1	0.4	●	●												
			150408	14.7	0.8	●	●												
			150412	14.4	1.2	●	●												
Finishing			DNGA 110402-T10	11.4	0.2	●	●												
			110404-T10	11.2	0.4	●	●												
			110408-T10	10.8	0.8	●	●												
			150402-T10	15.3	0.2	●	●												
			150404-T10	15.1	0.4	●	●												
			150408-T10	14.7	0.8	●	●												
			150412-T10	14.4	1.2	●	●												
Finishing			DNMG 110402	11.4	0.2	●													
			110404	11.2	0.4	●													
			110408	10.8	0.8	●													
			150402	15.3	0.2	●													
			150404	15.1	0.4	●													
			150408	14.7	0.8	●													
			150412	14.4	1.2	●													
Finishing		With Groove	DNMG 110402-T11	11.4	0.2	●													
			110404-T11	11.2	0.4	●													
			110408-T11	10.8	0.8	●													
			150402-T11	15.3	0.2	●													
			150404-T11	15.1	0.4	●													
			150408-T11	14.7	0.8	●													
			150412-T11	14.4	1.2	●													
Finishing			DNGW 110402	11.4	0.2	●													
			110404	11.2	0.4	●													
			110408	10.8	0.8	●													
			150402	15.3	0.2	●													
			150404	15.1	0.4	●													
			150408	14.7	0.8	●													
			150412	14.4	1.2	●													
Finishing			DNMG 110402-T10	11.4	0.2	●													
			110404-T10	11.2	0.4	●													
			110408-T10	10.8	0.8	●													
			150402-T10	15.3	0.2	●													
			150404-T10	15.1	0.4	●													
			150408-T10	14.7	0.8	●													
			150412-T10	14.4	1.2	●													

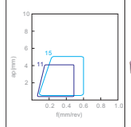
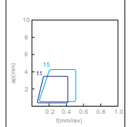
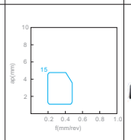
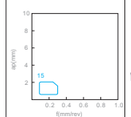
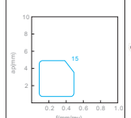
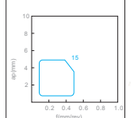
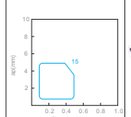
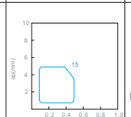
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			DNMG 150404-T12	15.1	0.4	●					●	●			
			150408-T12	14.7	0.8	●					●	●			
			150412-T12	14.4	1.2	●					●	●			
			150604-T12	15.1	0.4	●					●	●			
			150608-T12	14.7	0.8	●					●	●			
			150612-T12	14.4	1.2	●					●	●			
Finishing			DNMG 110404-T14	11.2	0.4		●	●		●					
			110408-T14	10.8	0.8		●	●		●					
			150404-T14	15.1	0.4		●	●		●					
			150408-T14	14.7	0.8		●	●		●					
			150412-T14	14.4	1.2		●	●		●					
			150604-T14	15.1	0.4		●	●		●					
			150608-T14	14.7	0.8		●	●		●					
			150612-T14	14.4	1.2		●	●		●					
Finishing			DNMG 110404-T15	11.2	0.4						●	●			
			110408-T15	10.8	0.8						●	●			
			150404-T15	15.1	0.4						●	●			
			150408-T15	14.7	0.8						●	●			
			150412-T15	14.4	1.2						●	●			
Finishing			DNMG 110404-T16	11.2	0.4						●	●			
			110408-T16	10.8	0.8						●	●			
			150404-T16	15.1	0.4						●	●			
			150408-T16	14.7	0.8						●	●			
			150412-T16	14.4	1.2						●	●			
			150604-T16	15.1	0.4						●	●			
			150608-T16	14.7	0.8						●	●			
			150612-T16	14.4	1.2						●	●			
Finishing			DNMG 110404-T30	11.2	0.4	●						●			
			110408-T30	10.8	0.8	●						●			
			150404-T30	15.1	0.4	●						●			
			150408-T30	14.7	0.8	●						●			
			150604-T30	15.1	0.4	●						●			
			150608-T30	14.7	0.8	●						●			
			150612-T30	14.4	1.2	●						●			
Semi-Finishing			DNMG 110404-T25	11.2	0.4						●	●			
			110408-T25	10.8	0.8						●	●			
			110412-T25	10.4	1.2						●	●			
			150404-T25	15.1	0.4						●	●			
			150408-T25	14.7	0.8						●	●			
			150604-T25	15.1	0.4						●	●			
			150608-T25	14.7	0.8						●	●			
			150612-T25	14.4	1.2						●	●			

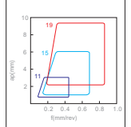
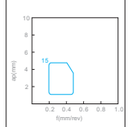
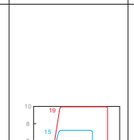
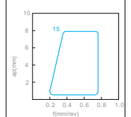
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			CNMG 110404-T18	11.2	0.4				●	●		●			
			110408-T18	10.8	0.8				●	●		●			
			110412-T18	10.4	1.2				●	●		●			
			150404-T18	15.1	0.4				●	●		●			
			150408-T18	14.7	0.8				●	●		●			
			150412-T18	14.4	1.2				●	●		●			
			150416-T18	14.0	1.6				●	●		●			
			150604-T18	15.1	0.4				●	●		●			
			150608-T18	14.7	0.8				●	●		●			
			150612-T18	14.4	1.2				●	●		●			
			150616-T18	14.0	1.6				●	●		●			
Semi-Finishing			DNMG 110404-T20	11.2	0.4					●		●			
			110408-T20	10.8	0.8					●		●			
			110412-T20	10.4	1.2					●		●			
			150404-T20	15.1	0.4					●		●			
			150408-T20	14.7	0.8					●		●			
			150604-T20	15.1	0.4					●		●			
			150608-T20	14.7	0.8					●		●			
			150612-T20	14.4	1.2					●		●			
Semi-Finishing – Roughing			DNMG 150404-T23	15.1	0.4				●	●	●	●	●		
			150408-T23	14.7	0.8				●	●	●	●	●		
			150412-T23	14.4	1.2				●	●	●	●	●		
			150604-T23	15.1	0.4				●	●	●	●	●		
			150608-T23	14.7	0.8				●	●	●	●	●		
			150612-T23	14.4	1.2				●	●	●	●	●		
Semi-Finishing			DNMG 150404-T17	15.1	0.4	●		●	●		●	●			
			150408-T17	14.7	0.8	●		●	●		●	●			
			150412-T17	14.4	1.2	●		●	●		●	●			
			150604-T17	15.1	0.4	●		●	●		●	●			
			150608-T17	14.7	0.8	●		●	●		●	●			
			150612-T17	14.4	1.2	●		●	●		●	●			
Semi-Finishing			DNMG 150404R-T31	15.1	0.4	●									
			150408R-T31	14.7	0.8	●									
			150412R-T31	14.4	1.2	●									
			150604R-T31	15.1	0.4	●									
			150608R-T31	14.7	0.8	●									
			150612R-T31	14.4	1.2	●									
Semi-Finishing			DNMG 150404L-T31	15.1	0.4	●									
			150408L-T31	14.7	0.8	●									
			150412L-T31	14.4	1.2	●									
			150604L-T31	15.1	0.4	●									
			150608L-T31	14.7	0.8	●									
			150612L-T31	14.4	1.2	●									
Semi-Finishing			DNMG 150404R-T32	15.1	0.4	●			●	●		●			
			150408R-T32	14.7	0.8	●			●	●		●			
			150412R-T32	14.4	1.2	●			●	●		●			
			150604R-T32	15.1	0.4	●			●	●		●			
			150608R-T32	14.7	0.8	●			●	●		●			
			150612R-T32	14.4	1.2	●			●	●		●			
Semi-Finishing			DNMG 150404L-T32	15.1	0.4	●			●	●		●			
			150408L-T32	14.7	0.8	●			●	●		●			
			150412L-T32	14.4	1.2	●			●	●		●			
			150604L-T32	15.1	0.4	●			●	●		●			
			150608L-T32	14.7	0.8	●			●	●		●			
			150612L-T32	14.4	1.2	●			●	●		●			

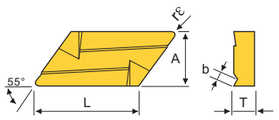
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			DNMG 110404-T26	11.2	0.4		●	●	●	●		●			
			110408-T26	10.8	0.8		●	●	●	●		●			
			110412-T26	10.4	1.2		●	●	●	●		●			
			150404-T26	15.1	0.4		●	●	●	●		●			
			150408-T26	14.7	0.8		●	●	●	●		●			
			150412-T26	14.4	1.2		●	●	●	●		●			
			150604-T26	15.1	0.4		●	●	●	●		●			
			150608-T26	14.7	0.8		●	●	●	●		●			
			150612-T26	14.4	1.2		●	●	●	●		●			
			150616-T26	14.0	1.6		●	●	●	●		●			
			190608-T26	18.5	0.8		●	●	●	●		●			
			190612-T26	18.1	1.2		●	●	●	●		●			
			190616-T26	17.7	1.6		●	●	●	●		●			
Semi-Finishing – Roughing			DNMG 150404-T28	15.1	0.4		●	●	●	●		●			
			150408-T28	14.7	0.8		●	●	●	●		●			
			150412-T28	14.4	1.2		●	●	●	●		●			
			150604-T28	15.1	0.4		●	●	●	●		●			
			150608-T28	14.7	0.8		●	●	●	●		●			
			150612-T28	14.4	1.2		●	●	●	●		●			
Roughing			DNMA 110404	11.2	0.4		●						●	●	
			110408	10.8	0.8		●						●	●	
			110412	10.4	1.2		●						●	●	
			150404	15.1	0.4		●						●	●	
			150408	14.7	0.8		●						●	●	
			150412	14.4	1.2		●						●	●	
			150604	15.1	0.4		●						●	●	
			150608	14.7	0.8		●						●	●	
			150612	14.4	1.2		●						●	●	
			150616	14.0	1.6		●						●	●	
			190608	18.5	0.8		●						●	●	
			190612	18.1	1.2		●						●	●	
			190616	17.7	1.6		●						●	●	
Roughing			DNMG 150404-T29	15.1	0.4		●		●		●				
			150408-T29	14.7	0.8		●		●		●				
			150412-T29	14.4	1.2		●		●		●				
			150604-T29	15.1	0.4		●		●		●				
			150608-T29	14.7	0.8		●		●		●				
			150612-T29	14.4	1.2		●		●		●				

KN/RN..inserts

KN

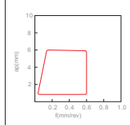
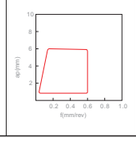


(Cutting Speed): m/min

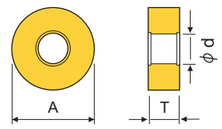
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Cutting Environment: ● Stable Cutting; General Cutting; Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	Dimension L	Dimension A	Dimension T	Dimension b	Dimension rε	Cutting Parameter ap(mm)	Cutting Parameter f(mm/rev)		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing ~ Roughing			KNUX 160405R11 160410R11	19.2 18.8	9.525 9.525	4.76 4.76	2.2 2.2	0.5 1.0	1.0-6.0 1.5-6.0	0.2-0.35 0.3-0.6		● ●			● ●	● ●	● ●					
Semi-Finishing ~ Roughing			KNUX 160405L11 160410L11	19.2 18.8	9.525 9.525	4.76 4.76	2.2 2.2	0.5 1.0	1.0-6.0 1.5-6.0	0.2-0.35 0.3-0.6		● ●			● ●	● ●	● ●					

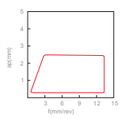
RN



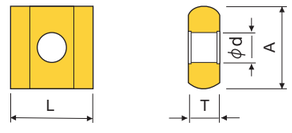
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Cutting Environment: ● Stable Cutting; General Cutting; Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	●	●		✕	●	✕	✕	✕	●	●	
M	Stainless Steel	●	●					✕	●	●	●	
K	Iron	●	●				✕				✕	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			●								
S	Carbide/Powder Metallurgy							✕	●	●		
H	Titanium/Superalloy/Carbon Fiber							✕	●	●		

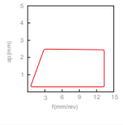
Application	Cutting Parameter	Product Image	Specification	Dimension L	Dimension A	Dimension T	Dimension ϕd	Dimension rε	Cutting Parameter ap(mm)	Cutting Parameter f(mm/rev)		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing ~ Roughing			RNMG 0903MO 1204MO 1506MO 1906MO 2506MO 2509MO 3109MO	- - - - - - -	9.525 12.7 15.875 19.05 25.4 25.4 31.75	3.18 4.76 6.35 6.35 6.35 9.52 9.52	3.81 5.16 6.35 7.93 9.12 9.12 12.7	- - - - - - -	0.09-0.9 0.12-1.2 0.15-1.5 0.19-1.9 0.25-2.5 0.25-2.5 0.3-2.5	0.9-4.5 1.2-4.8 1.15-1.5 1.9-7.6 2.5-10.0 2.5-10.0 3.5-13.0				● ● ● ● ● ● ●		● ● ● ● ● ● ●					

175.32



Cutting Environment: ● Stable Cutting; General Cutting; Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	●	●		✕	●	✕	✕	✕	●	●	
M	Stainless Steel	●	●					✕	●	●	●	
K	Iron	●	●				✕				✕	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			●								
S	Carbide/Powder Metallurgy							✕	●	●		
H	Titanium/Superalloy/Carbon Fiber							✕	●	●		

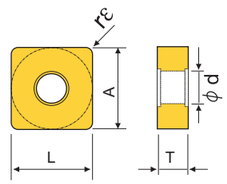
Application	Cutting Parameter	Product Image	Specification	Dimension L	Dimension A	Dimension T	Dimension ϕd	Dimension rε	Cutting Parameter ap(mm)	Cutting Parameter f(mm/rev)		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Heavy Cut or Machining of Wheel Hub			175.32 191940-22 191940-24 191940-28	19.1 19.1 19.1	19.1 19.1 19.1	10 10 10	6.35 6.35 6.35	4.0 4.0 4.0							●● ●● ●●		● ● ●					

SN

SN.. Double Sided Cutting Edge Inserts

(mm)

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

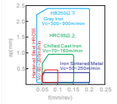
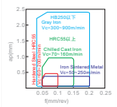
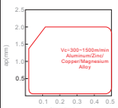
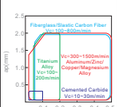
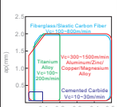
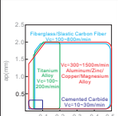


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

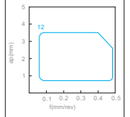
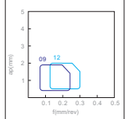
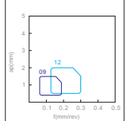
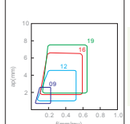
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			SNGA 120402 120404 120408 120412	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●												
Finishing			SNGA 120402-T33 120404-T33 120408-T33 120412-T33	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●												
Finishing			SNMG 120402 120404 120408 120412	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			SNMG 120402-T11 120404-T11 120408-T11 120412-T11	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			SNGW 120402 120404 120408 120412	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			SNMG 120402-T33 120404-T33 120408-T33 120412-T33	12.7 12.3 11.9 11.5	0.2 0.4 0.8 1.2	● ● ● ●													

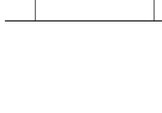
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			SNMG 120404-T12 120408-T12 120412-T12	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●				● ● ●	●					
Finishing			SNMG 090304-T14 090308-T14 120404-T14 120408-T14 120412-T14	9.1 8.7 12.3 11.9 11.5	0.4 0.8 0.4 0.8 1.2				● ● ● ● ●		● ● ● ● ●					
Finishing			SNMG 090304-T16 090308-T16 090312-T16 120404-T16 120408-T16 120412-T16 150608-T16 150612-T16	9.1 8.7 8.3 12.3 11.9 11.5 15.0 14.6	0.4 0.8 1.2 0.4 0.8 1.2 0.8 1.2						● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●				
Semi-Finishing – Roughing			SNMG 090304-T18 090308-T18 090312-T18 120404-T18 120408-T18 120412-T18 120416-T18 150608-T18 150612-T18 150616-T18 190608-T18 190612-T18 190616-T18	9.1 8.7 8.3 12.3 11.9 11.5 11.1 15.0 14.6 14.2 18.2 17.8 17.4	0.4 0.8 1.2 0.4 0.8 1.2 1.6 0.8 1.2 1.6 0.8 1.2 1.6				● ● ● ● ● ● ● ● ● ● ● ● ●		● ● ● ● ● ● ● ● ● ● ● ● ●					

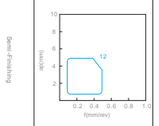
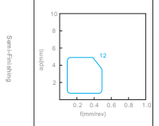
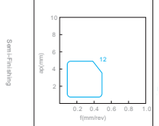
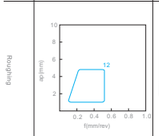
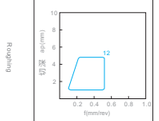
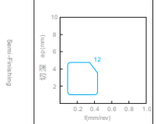
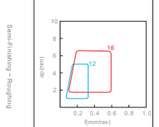
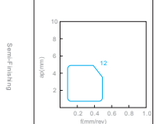
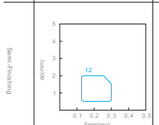
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Roughing			SNMG 120404R-T32 120408R-T32 120412R-T32	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●				
Roughing			SNMG 120404L-T32 120408L-T32 120412L-T32	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●				
Semi-Finishing			SNMG 120404-T19 120408-T19 120412-T19	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●			● ● ●	● ● ●	● ● ●	● ● ●				
Semi-Finishing – Roughing			SNMG 120404-T20 120408-T20 120412-T20 150608-T20 150612-T20 150616-T20	12.3 11.9 11.5 15.0 14.6 14.2	0.4 0.8 1.2 0.8 1.2 1.6					● ● ● ● ● ●	● ● ● ● ● ●					
Semi-Finishing			SNMG 120404-T21 120408-T21 120412-T21	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				
Semi-Finishing			SNMG 120404-T17 120408-T17 120412-T17	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				

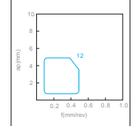
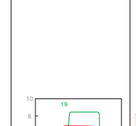
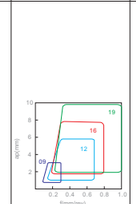
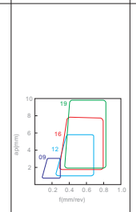
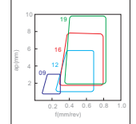
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing			SNMG 120404-T22 120408-T22 120412-T22	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●					● ● ●					
Semi-Finishing			SNMG 120404-T23 120408-T23 120412-T23	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			
Semi-Finishing			SNMG 120404-T24 120408-T24 120412-T24	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			
Roughing			SNMG 120404R-T32 120408R-T32 120412R-T32	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●				
Roughing			SNMG 120404L-T32 120408L-T32 120412L-T32	12.3 11.9 11.5	0.4 0.8 1.2				● ● ●	● ● ●	● ● ●	● ● ●				
Semi-Finishing			SNMG 120404-T19 120408-T19 120412-T19	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●			● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			
Semi-Finishing – Roughing			SNMG 120404-T20 120408-T20 120412-T20 150608-T20 150612-T20 150616-T20	12.3 11.9 11.5 15.0 14.6 14.2	0.4 0.8 1.2 0.8 1.2 1.6					● ● ● ● ● ●	● ● ● ● ● ●					
Semi-Finishing			SNMG 120404-T21 120408-T21 120412-T21	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				
Semi-Finishing			SNMG 120404-T17 120408-T17 120412-T17	12.3 11.9 11.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	●	●		✕	●	✕	●	●	●		
M	Stainless Steel	●	●				✕	●	●	●		
K	Iron	●	●				✕				✕	●
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			●								
S	Carbide/Powder Metallurgy						✕	●	●	●		
H	Titanium/Superalloy/Carbon Fiber						✕	●	●	●		

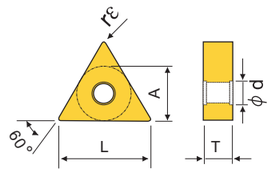
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing			SNMG 120404-T25 120408-T25 120412-T25	12.3 11.9 11.5	0.4 0.8 1.2						● ● ●	● ● ●	● ● ●			
Semi-Finishing – Roughing			SNMG 090304-T26 090308-T26 120404-T26 120408-T26 120412-T26 120416-T26 150608-T26 150612-T26 150616-T26 190608-T26 190612-T26 190616-T26 190624-T26 250724-T26 250924-T26	9.1 8.7 12.3 11.9 11.5 11.1 15.0 14.6 14.2 18.2 17.8 17.4 16.6 23.0 23.0	0.4 0.8 0.4 0.8 1.2 1.6 0.8 1.2 1.6 0.8 1.2 1.6 2.4 2.4 2.4				● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ● ● ●		
Roughing			SNMA 090304 090308 120404 120408 120412 120416 150608 150612 150616 190608 190612 190616 190624 250724 250924	9.1 8.7 12.3 11.9 11.5 11.1 15.0 14.6 14.2 18.2 17.8 17.4 16.6 23.0 23.0	0.4 0.8 0.4 0.8 1.2 1.6 0.8 1.2 1.6 0.8 1.2 1.6 2.4 2.4 2.4		● ● ● ● ● ● ● ● ● ● ● ● ●					● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ● ● ●		
Roughing			SNMG 120408-T29 120412-T29 120416-T29 150608-T29 150612-T29 150616-T29 150624-T29 190612-T29 190616-T29 190624-T29	11.9 11.5 11.1 15.0 14.6 14.2 13.4 17.8 17.4 16.6	0.8 1.2 1.6 0.8 1.2 1.6 2.4 1.2 1.6 2.4				● ● ● ● ● ● ● ● ● ●		● ● ● ● ● ● ● ● ● ●		● ● ● ● ● ● ● ● ● ●			
Heavy Cutting-Roughing			SNMM 120408-T29 120412-T29 120416-T29 150608-T29 150612-T29 150616-T29 150624-T29 190612-T29 190616-T29 190624-T29	11.9 11.5 11.1 15.0 14.6 14.2 13.4 17.8 17.4 16.6	0.8 1.2 1.6 0.8 1.2 1.6 2.4 1.2 1.6 2.4				● ● ● ● ● ● ● ● ● ●		● ● ● ● ● ● ● ● ● ●					

TN

TN.. Double Sided Cutting Edge Inserts

(mm)

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

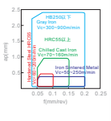
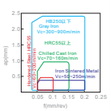
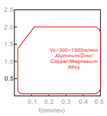
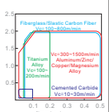
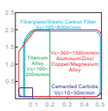
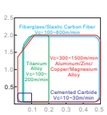


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

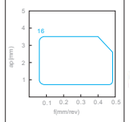
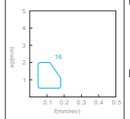
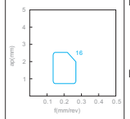
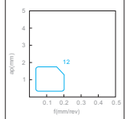
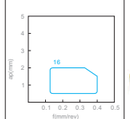
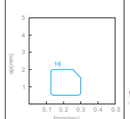
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application	Cutting Environment
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
Finishing			TNGA 160402 160404 160408 160412	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●									
Finishing			TNGA 160402-T34 160404-T34 160408-T34 160412-T34	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●									
Finishing			TNMG 160402 160404 160408 160412	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●										
Finishing		With Groove	TNMG 160402-T11 160404-T11 160408-T11 160412-T11	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●										
Finishing			TNGW 160402 160404 160408 160412	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●										
Finishing			TNMG 160402-T34 160404-T34 160408-T34 160412-T34	16.0 15.5 14.5 13.5	0.2 0.4 0.8 1.2	● ● ● ●										

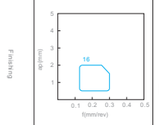
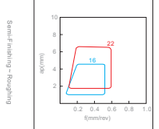
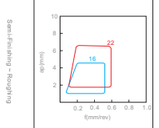
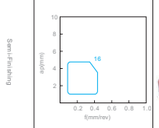
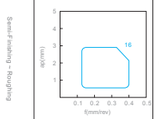
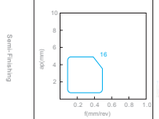
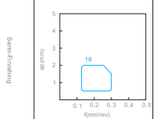
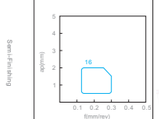
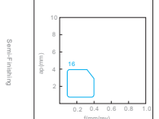
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application	Cutting Environment
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			TNMG 160404-T12 160408-T12 160412-T12	15.5 14.5 13.5	0.4 0.8 1.2		● ● ●				●● ●● ●●					
Finishing		R-T32 L-T32 	TNGG 160402R-T32 160404R-T32 160408R-T32 160402L-T32 160404L-T32 160408L-T32	16.0 15.5 14.5 16.0 15.5 14.5	0.2 0.4 0.8 0.2 0.4 0.8		●● ●● ●● ●● ●● ●●					●● ●● ●● ●● ●● ●●				
Finishing		R-P L-P 	TNGG 160402R-T35 160404R-T35 160408R-T35 160402L-T35 160404L-T35 160408L-T35	16.0 15.5 14.5 16.0 15.5 14.5	0.2 0.4 0.8 0.2 0.4 0.8		●● ●● ●● ●● ●● ●●					● ● ● ● ● ●				
Finishing			TNMG 160404-T13 160408-T13 160412-T13	15.5 14.5 13.5	0.4 0.8 1.2	● ● ●										
Finishing			TNMG 160404-T14 160408-T14	15.5 14.5	0.4 0.8						●● ●●		● ●			
Finishing			TNMG 160404-T15 160408-T15	15.5 14.5	0.4 0.8								●● ●●			

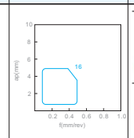
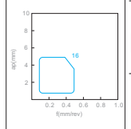
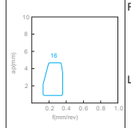
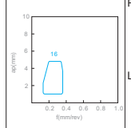
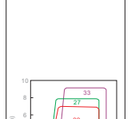
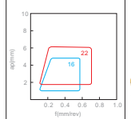
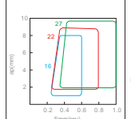
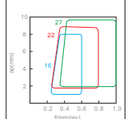
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application	Cutting Environment
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			TNMG 160404-T16 160408-T16	15.5 14.5	0.4 0.8					● ●	● ●					
Semi-Finishing – Roughing			TNMG 160404-T18 160408-T18 160412-T18 220404-T18 220408-T18 220412-T18 220416-T18	15.5 14.5 13.5 21.0 20.0 19.0 18.2	0.4 0.8 1.2 0.4 0.8 1.2 1.6					●● ●● ●● ●● ●● ●● ●●	● ● ● ● ● ● ●			● ● ● ● ● ● ●		
Semi-Finishing – Roughing			TNMG 160404-T20 160408-T20 160412-T20 220404-T20 220408-T20 220412-T20 220416-T20	15.5 14.5 13.5 21.0 20.0 19.0 18.2	0.4 0.8 1.2 0.4 0.8 1.2 1.6					●● ●● ●● ●● ●● ●● ●●						
Semi-Finishing			TNMG 160404-T19 160408-T19 160412-T19	15.5 14.5 13.5	0.4 0.8 1.2	● ● ●			●●●●●● ●●●●●● ●●●●●●							
Semi-Finishing – Roughing			TNMG 160404-T37 160408-T37 160412-T37	15.5 14.5 13.5	0.4 0.8 1.2					●● ●● ●●		●● ●● ●●				
Semi-Finishing			TNMG 160404-T21 160408-T21 160412-T21	15.5 14.5 13.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				
Semi-Finishing			TNMG 160404-T17 160408-T17 160412-T17	15.5 14.5 13.5	0.4 0.8 1.2	● ● ●				●● ●● ●●		●● ●● ●●				
Semi-Finishing			TNMG 160404-T36 160408-T36 160412-T36	15.5 14.5 13.5	0.4 0.8 1.2							●● ●● ●●				
Semi-Finishing			TNMG 160404-T22 160408-T22 160412-T22	15.5 14.5 13.5	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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

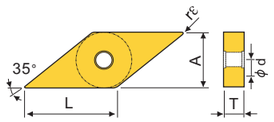
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing		T23 T25 	TNMG 160404-T23 160408-T23 160412-T23 TNMG 160404-T25 160408-T25 160412-T25	15.5 14.5 13.5 15.5 14.5 13.5	0.4 0.8 1.2 0.4 0.8 1.2		●●●●●● ●●●●●● ●●●●●●									
Semi-Finishing		T24 T28 	TNMG 160404-T24 160408-T24 160412-T24 TNMG 160404-T28 160408-T28 160412-T28	15.5 14.5 13.5 15.5 14.5 13.5	0.4 0.8 1.2 0.4 0.8 1.2		●●●●●● ●●●●●● ●●●●●● ●●●● ●●●● ●●●●									
Semi-Finishing – Roughing		R-T32 L-T32 	TNMG 160404R-T32 160408R-T32 160412R-T32 160404L-T32 160408L-T32 160412L-T32	15.5 14.5 13.5 15.5 14.5 13.5	0.4 0.8 1.2 0.4 0.8 1.2	● ● ● ● ● ●	●● ●● ●● ●● ●● ●●		● ● ● ● ● ●							
Semi-Finishing – Roughing		R-T31 L-T31 	TNMG 160404R-T31 160408R-T31 160412R-T31 160404L-T31 160408L-T31 160412L-T31	15.5 14.5 13.5 15.5 14.5 13.5	0.4 0.8 1.2 0.4 0.8 1.2	● ● ● ● ● ●	●● ●● ●● ●● ●● ●●		● ● ● ● ● ●							
Semi-Finishing – Roughing			TNMG 110308-T26 160404-T26 160408-T26 160412-T26 160416-T26 220404-T26 220408-T26 220412-T26 220416-T26 270608-T26 270612-T26 270616-T26 330716-T26 330916-T26 330924-T26	9.0 15.5 14.5 13.5 12.5 21.0 20.0 19.0 18.2 25.5 24.5 23.5 29.0 29.0 27.1	0.8 0.4 0.8 1.2 1.6 0.4 0.8 1.2 1.6 0.8 1.2 1.6 1.6 1.6 2.4		● ● ● ● ● ● ● ● ● ● ● ● ● ● ●		●● ●● ●● ●● ●● ●● ●● ●● ●● ●● ●● ●● ●● ●● ●●						
Roughing			TNMA 160404 160408 160412 160416 220408 220412 220416 270612 270616	15.5 14.5 13.5 12.5 20.0 19.0 18.2 24.4 23.3	0.4 0.8 1.2 1.6 0.8 1.2 1.6 1.2 1.6		● ● ● ● ● ● ● ● ●				●● ●● ●● ●● ●● ●● ●● ●● ●●					
Roughing			TNMG 160404-T29 160408-T29 160412-T29 160416-T29 220408-T29 220412-T29 220416-T29 270612-T29	15.5 14.5 13.5 12.5 21.0 20.0 19.0 24.5	0.4 0.8 1.2 1.6 0.8 1.2 1.6 1.2		●● ●● ●● ●● ●● ●● ●● ●●		●● ●● ●● ●● ●● ●● ●● ●●		● ● ● ● ● ● ● ●					
Heavy Cutting Roughing			TNMM 160408-T29 160412-T29 220408-T29 220412-T29 220416-T29 270612-T29 270616-T29	11.6 15.3 14.8 14.4 18.1 17.7 16.9 25.8	1.2 0.8 1.2 1.6 1.2 1.6 2.4 2.4		●● ●● ●● ●● ●● ●● ●● ●●		● ● ● ● ● ● ● ●							

VN

VN.. Double Sided Cutting Edge Inserts

(mm)

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

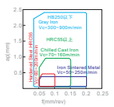
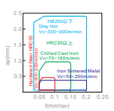
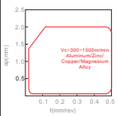
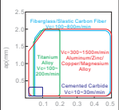
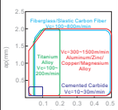
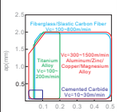


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

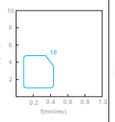
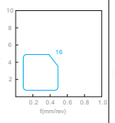
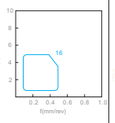
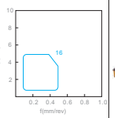
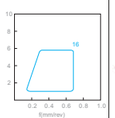
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
Finishing			VNGA 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ● ● ● ● ●									
Finishing			VNGA 160402-T10 160404-T10 160408-T10 160412-T10	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ● ● ● ● ●									
Finishing			VNMG 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ●									
Finishing			VNMG 120402-T11 120404-T11 120408-T11 120412-T11	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ●									
Finishing			VNGW 160402 160404 160408 160412	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ●									
Finishing			VNMG 160402-T10 160404-T10 160408-T10 160412-T10	16.1 15.6 14.6 13.6	0.2 0.4 0.8 1.2		● ● ● ●									

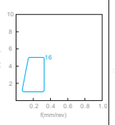
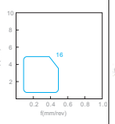
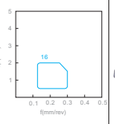
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			VNMG 160404-T12 160408-T12 160412-T12	15.6 14.6 13.6	0.4 0.8 1.2	●					●		●			
Finishing			VNMG 160404-T14 160408-T14	15.6 14.6	0.4 0.8	● ● ● ●					●		●			
Finishing			VNMG 160404-T15 160408-T15	15.6 14.6	0.4 0.8						● ●		● ●			
Semi-Finishing			VNMG 160404-T16 160408-T16	15.6 14.6	0.4 0.8						● ●		● ●			
Semi-Finishing – Roughing			VNMG 160404-T18 160408-T18 160412-T18	15.6 14.6 13.6	0.4 0.8 1.2	● ● ● ● ● ●					● ● ●					

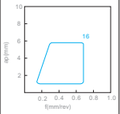
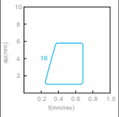
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing			VNMG 160404-T19 160408-T19 160412-T19	15.6 14.6 13.6	0.4 0.8 1.2	● ● ●			● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			
Semi-Finishing – Roughing			VNMG 160404-T20 160408-T20	15.6 14.6	0.4 0.8							● ●	● ●			
Semi-Finishing			VNMG 160404-T21 160408-T21 160412-T21	15.6 14.6 13.6	0.4 0.8 1.2	● ● ●				● ● ●		● ● ●				
Semi-Finishing			VNMG 160404-T17 160408-T17 160412-T17	15.6 14.6 13.6	0.4 0.8 1.2	● ● ●				●● ●● ●●		●● ●● ●●				
Semi-Finishing			VNMG 160404-T22 160408-T22 160412-T22	15.6 14.6 13.6	0.4 0.8 1.2	● ● ●						● ● ●				
Semi-Finishing			VNMG 160404-T23 160408-T23 160412-T23	15.6 14.6 13.6	0.4 0.8 1.2							●●●●●● ●●●●●● ●●●●●●				
Semi-Finishing			VNMG 160404-T24 160408-T24 160412-T24	15.6 14.6 13.6	0.4 0.8 1.2							●●●●●● ●●●●●● ●●●●●●				
Semi-Finishing – Roughing			VNMG 160404-T26 160408-T26 160412-T26	15.6 14.6 13.6	0.4 0.8 1.2							●●●●● ●●●●● ●●●●●		●● ●● ●●		

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	◐	●		✕	◐	✕	◐	◐	●		
M	Stainless Steel	◐	◐				✕	◐	◐	◐		
K	Iron	◐	●				✕				✕	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			◐								
S	Carbide/Powder Metallurgy							✕	◐	●		
H	Titanium/Superalloy/Carbon Fiber							✕	◐	●		

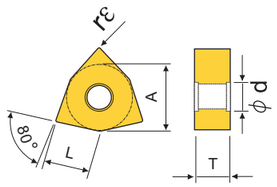
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Roughing			VNMA 160404 160408 160412	15.6 14.6 13.6	0.4 0.8 1.2		● ● ●						●● ●● ●●			
Roughing			VNMG 160408-T29 160412-T29	14.6 13.6	0.8 1.2		●● ●●		● ●				● ●			

WN.. Double Sided Cutting Edge Inserts

WN

(mm)

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

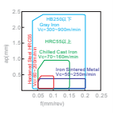
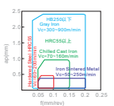
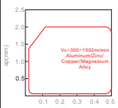
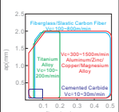
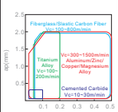
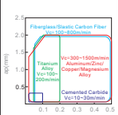


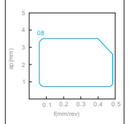
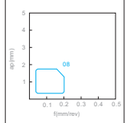
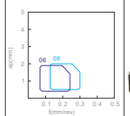
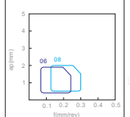
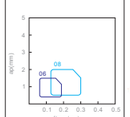
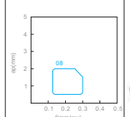
(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

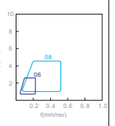
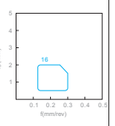
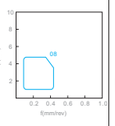
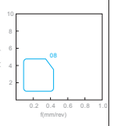
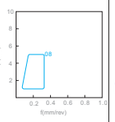
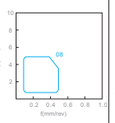
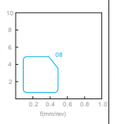
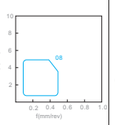
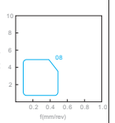
Application	Cutting Environment	Stable Cutting	General Cutting	Unstable Cutting
P	Steel	●	◐	✕
M	Stainless Steel	●	◐	✕
K	Iron	●	◐	✕
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●	◐	✕
S	Carbide/Powder Metallurgy	●	◐	✕
H	Titanium/Superalloy/Carbon Fiber	●	◐	✕

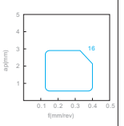
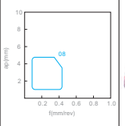
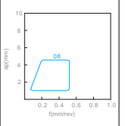
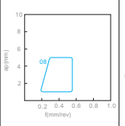
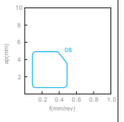
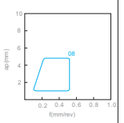
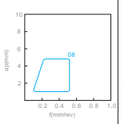
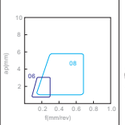
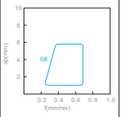
Application	Cutting Parameter	Product Image	Specification	L	rε	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			WNGA 080402 080404 080408 080412	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●												
Finishing			WNGA 080402-T34 080404-T34 080408-T34 080412-T34	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●	● ● ● ●												
Finishing			WNMG 080402 080404 080408 080412	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			WNMG 080402-T11 080404-T11 080408-T11 080412-T11	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			WNGW 080402 080404 080408 080412	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●													
Finishing			WNMG 080402-T34 080404-T34 080408-T34 080412-T34	8.7 8.4 8.3 8.2	0.2 0.4 0.8 1.2	● ● ● ●													

Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			WNMG 080404-T12 080408-T12 080412-T12	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●			● ● ●	● ● ●						
Finishing			WNMG 080404-T13 080408-T13 080412-T13	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●										
Finishing			WNMG 060404-T14 060408-T14 080404-T14 080408-T14	6.2 6.1 8.4 8.3	0.4 0.8 0.4 0.8		● ● ● ●		● ● ● ●							
Finishing			WNMG 060304-T15 060404-T15 080404-T15 080408-T15	6.2 6.2 8.4 8.3	0.4 0.4 0.4 0.8				● ● ● ●							
Finishing			WNMG 060404-T16 060408-T16 080404-T16 080408-T16	6.2 6.1 8.4 8.3	0.4 0.8 0.4 0.8				● ● ● ●							
Semi-Finishing			WNMG 080404-T17 080408-T17 080412-T17	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●			●● ●● ●●	●● ●● ●●						

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			WNMG 060404-T18 060408-T18 080404-T18 080408-T18 080412-T18	6.2 6.1 8.4 8.3 8.2	0.4 0.8 0.4 0.8 1.2				● ● ● ● ●		● ● ● ● ●					
Semi-Finishing			WNMG 080404-T36 080408-T36 080412-T36	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●			●●●●●● ●●●●●● ●●●●●●							
Semi-Finishing			WNMG 080404-T19 080408-T19 080412-T19	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●			●●●●●● ●●●●●● ●●●●●●							
Semi-Finishing			WNMG 080404-T25 080408-T25 080412-T25	8.4 8.3 8.2	0.4 0.8 1.2					●●● ●●● ●●●						
Semi-Finishing – Roughing			WNMG 060404-T20 060408-T20 060412-T20 080404-T20 080408-T20 080412-T20	6.2 6.1 6.0 8.4 8.3 8.2	0.4 0.8 1.2 0.4 0.8 1.2					●● ●● ●● ●● ●● ●●						
Semi-Finishing			WNMG 080404-T21 080408-T21 080412-T21	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●			● ● ●		● ● ●					
Semi-Finishing			WNMG 080404-T22 080408-T22 080412-T22	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●				● ● ●						
Semi-Finishing			WNMG 080404-T23 080408-T23 080412-T23	8.4 8.3 8.2	0.4 0.8 1.2					●●●●●● ●●●●●● ●●●●●●						
Semi-Finishing			WNMG 080404-T24 080408-T24 080412-T24	12.4 12.0 11.6	0.4 0.8 1.2					●●●●●● ●●●●●● ●●●●●●						

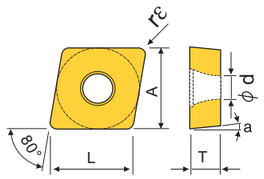
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing			WNMG 080404-T37 080408-T37 080412-T37	8.4 8.3 8.2	0.4 0.8 1.2		●● ●● ●●			● ● ●						
Semi-Finishing – Roughing			WNMG 080404-T38 080408-T38 080412-T38	8.4 8.3 8.2	0.4 0.8 1.2		●● ●● ●●			●● ●● ●●						
Semi-Finishing – Roughing			WNMG 080404-T39 080408-T39 080412-T39	8.4 8.3 8.2	0.4 0.8 1.2		●● ●● ●●			● ● ●						
Semi-Finishing – Roughing			WNMG 080404-T26 080408-T26 080412-T26	8.4 8.3 8.2	0.4 0.8 1.2		●●●●● ●●●●● ●●●●●			●● ●● ●●						
Semi-Finishing			WNMG 080404-T28 080408-T28 080412-T28	8.4 8.3 8.2	0.4 0.8 1.2		●●●● ●●●● ●●●●									
Semi-Finishing – Roughing			WNMG 080404R-T32 080408R-T32 080412R-T32	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●	●●●● ●●●● ●●●●									
Semi-Finishing – Roughing			WNMG 080404L-T32 080408L-T32 080412L-T32	8.4 8.3 8.2	0.4 0.8 1.2	● ● ●	●●●● ●●●● ●●●●									
Roughing			WNMA 060404 060408 060412 080404 080408 080412 080416	6.2 6.1 6.0 8.4 8.3 8.2 8.1	0.4 0.8 1.2 0.4 0.8 1.2 1.6	● ● ● ● ● ● ●							●● ●● ●● ●● ●● ●● ●●		
Roughing			WNMG 080408-T29 080412-T29 080416-T29	8.3 8.2 8.1	0.8 1.2 1.6		●● ●● ●●		● ● ●				● ● ●		

CC.. Single Side Cutting Edge Inserts

CC

(mm)

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°

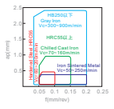
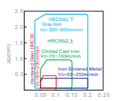
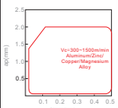
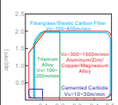
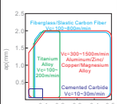
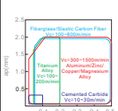


(Cutting Speed): m/min⁻¹

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

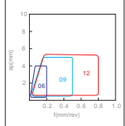
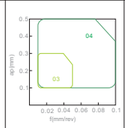
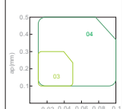
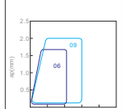
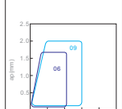
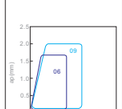
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application	Cutting Environment	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
Finishing			CCGT 060202	6.2	0.2	●	●									
			060204	6.0	0.4	●	●									
			060208	5.6	0.8	●	●									
			09T302	9.4	0.2	●	●									
			09T304	9.2	0.4	●	●									
			09T308	8.8	0.8	●	●									
			120402	12.6	0.2	●	●									
			120404	12.4	0.4	●	●									
			120408	12.0	0.8	●	●									
Finishing			CCGT 060202-T10	6.2	0.2	●	●									
			060204-T10	6.0	0.4	●	●									
			060208-T10	5.6	0.8	●	●									
			09T302-T10	9.4	0.2	●	●									
			09T304-T10	9.2	0.4	●	●									
			09T308-T10	8.8	0.8	●	●									
			120402-T10	12.6	0.2	●	●									
			120404-T10	12.4	0.4	●	●									
			120408-T10	12.0	0.8	●	●									
Finishing			CCGT 060202	6.2	0.2	●										
			060204	6.0	0.4	●										
			060208	5.6	0.8	●										
			09T302	9.4	0.2	●										
			09T304	9.2	0.4	●										
			09T308	8.8	0.8	●										
			120402	12.6	0.2	●										
			120404	12.4	0.4	●										
			120408	12.0	0.8	●										
Finishing			CCGT 060202-T11	6.2	0.2	●										
			060204-T11	6.0	0.4	●										
			060208-T11	5.6	0.8	●										
			09T302-T11	9.4	0.2	●										
			09T304-T11	9.2	0.4	●										
			09T308-T11	8.8	0.8	●										
			120402-T11	12.6	0.2	●										
			120404-T11	12.4	0.4	●										
			120408-T11	12.0	0.8	●										
Finishing			CCGW060202	6.2	0.2	●										
			060204	6.0	0.4	●										
			060208	5.6	0.8	●										
			09T302	9.4	0.2	●										
			09T304	9.2	0.4	●										
			09T308	8.8	0.8	●										
			120402	12.6	0.2	●										
			120404	12.4	0.4	●										
			120408	12.0	0.8	●										
Finishing			CCGT 060202-T10	6.2	0.2	●										
			060204-T10	6.0	0.4	●										
			060208-T10	5.6	0.8	●										
			09T302-T10	9.4	0.2	●										
			09T304-T10	9.2	0.4	●										
			09T308-T10	8.8	0.8	●										
			120402-T10	12.6	0.2	●										
			120404-T10	12.4	0.4	●										
			120408-T10	12.0	0.8	●										

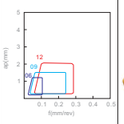
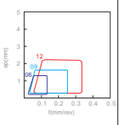
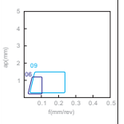
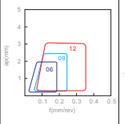
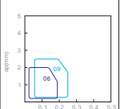
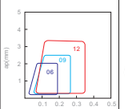
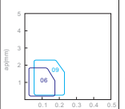
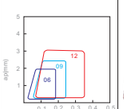
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

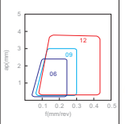
Application	Cutting Environment	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	◐	●		✕	◐	✕	✕	◐	●		
M	Stainless Steel	◐	●				✕	◐	●	●		
K	Iron	◐	●			✕					✕	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			◐								
S	Carbide/Powder Metallurgy						✕	◐	●			
H	Titanium/Superalloy/Carbon Fiber						✕	◐	●			

Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			CCGT 060202-T11	6.2	0.2		●									
			060204-T11	6.0	0.4		●									
			060208-T11	5.6	0.8		●									
			09T302-T11	9.4	0.2		●									
			09T304-T11	9.2	0.4		●									
			09T308-T11	8.8	0.8		●									
			120402-T11	12.6	0.2		●									
			120404-T11	12.4	0.4		●									
			120408-T11	12.0	0.8		●									
Finishing			CCGT 0301005R	3.6	0.05	●	●					●	●			
			030101R	3.5	0.1	●	●					●	●			
			030102R	3.3	0.2	●	●					●	●			
			030104R	3.1	0.4	●	●					●	●			
			0401005R	4.3	0.05	●	●					●	●			
			040101R	4.2	0.1	●	●					●	●			
			040102R	4.1	0.2	●	●					●	●			
			040104R	3.9	0.4	●	●					●	●			
Finishing			CCGT 0301005L	3.6	0.05	●	●					●	●			
			030101L	3.5	0.1	●	●					●	●			
			030102L	3.3	0.2	●	●					●	●			
			030104L	3.1	0.4	●	●					●	●			
			0401005L	4.3	0.05	●	●					●	●			
			040101L	4.2	0.1	●	●					●	●			
			040102L	4.1	0.2	●	●					●	●			
			040104L	3.9	0.4	●	●					●	●			
Finishing			CCGT 060201ER-T40	6.5	0.1	●	●					●	●			
			060202ER-T40	6.2	0.2	●	●					●	●			
			060204ER-T40	6.0	0.4	●	●					●	●			
			09T301ER-T40	9.7	0.1	●	●					●	●			
			09T302ER-T40	9.4	0.2	●	●					●	●			
			09T304ER-T40	9.2	0.4	●	●					●	●			
Finishing			CCGT 060201EL-T40	6.5	0.1	●	●					●	●			
			060202EL-T40	6.2	0.2	●	●					●	●			
			060204EL-T40	6.0	0.4	●	●					●	●			
			09T301EL-T40	9.7	0.1	●	●					●	●			
			09T302EL-T40	9.4	0.2	●	●					●	●			
			09T304EL-T40	9.2	0.4	●	●					●	●			
Finishing		R–H L–H	CCGT 060201R/L-T41	6.5	0.1	●	●					●	●			
			060202R/L-T41	6.2	0.2	●	●					●	●			
			060204R/L-T41	6.0	0.4	●	●					●	●			
			09T301R/L-T41	9.7	0.1	●	●					●	●			
			09T302R/L-T41	9.4	0.2	●	●					●	●			
			09T304R/L-T41	9.2	0.4	●	●					●	●			

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

Application	Cutting Environment	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			CCMT 060202-T42	6.2	0.2		●	●				●	●			
			060204-T42	6.0	0.4		●	●				●	●			
			060208-T42	5.6	0.8		●	●				●	●			
			09T304-T42	9.2	0.4		●	●				●	●			
			09T308-T42	8.8	0.8		●	●				●	●			
			120404-T42	12.4	0.4		●	●				●	●			
			120408-T42	12.0	0.8		●	●				●	●			
Finishing			CCMT 060202-T15	6.2	0.2							●	●			
			060204-T15	6.0	0.4							●	●			
			060208-T15	5.6	0.8							●	●			
			09T304-T15	9.2	0.4							●	●			
			09T308-T15	8.8	0.8							●	●			
			120404-T15	12.4	0.4							●	●			
			120408-T15	12.0	0.8							●	●			
Finishing			CCMT 060202-T30	6.2	0.2	●						●	●			
			060204-T30	6.0	0.4	●						●	●			
			09T304-T30	9.2	0.4	●						●	●			
			09T308-T30	8.8	0.8	●						●	●			
Semi-Finishing – Roughing			CCMT 060204-T23	6.0	0.4		●	●		●	●	●	●			
			060208-T23	5.6	0.8		●	●		●	●	●	●			
			09T304-T23	9.2	0.4		●	●		●	●	●	●			
			09T308-T23	8.8	0.8		●	●		●	●	●	●			
			120404-T23	12.4	0.4		●	●		●	●	●	●			
			120408-T23	12.0	0.8		●	●		●	●	●	●			
Semi-Finishing			CCMT 060204-T21	6.0	0.4	●		●		●						
			060208-T21	5.6	0.8	●		●		●						
			09T304-T21	9.2	0.4	●		●		●						
			09T308-T21	8.8	0.8	●		●		●						
Semi-Finishing – Roughing			CCMT 060204-T24	6.0	0.4			●	●	●	●	●				
			060208-T24	5.6	0.8			●	●	●	●	●				
			09T304-T24	9.2	0.4			●	●	●	●	●				
			09T308-T24	8.8	0.8			●	●	●	●	●				
			120404-T24	12.4	0.4			●	●	●	●	●				
			120408-T24	12.0	0.8			●	●	●	●	●				
Semi-Finishing			CCMT 060204-T17	6.0	0.4	●		●	●		●	●				
			060208-T17	5.6	0.8	●		●	●		●	●				
			09T304-T17	9.2	0.4	●		●	●		●	●				
			09T308-T17	8.8	0.8	●		●	●		●	●				
Semi-Finishing – Roughing			CCMT 060204	6.0	0.4		●	●		●	●	●	●			
			060208	5.6	0.8		●	●		●	●	●	●			
			09T304	9.2	0.4		●	●		●	●	●	●			
			09T308	8.8	0.8		●	●		●	●	●	●			
			120404	12.4	0.4		●	●		●	●	●	●			
			120408	12.0	0.8		●	●		●	●	●	●			

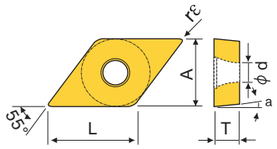
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Roughing			CCMT 060204-T43	6.0	0.4		●	●		●			●	●		
			060208-T43	5.6	0.8		●	●		●			●	●		
			09T304-T43	9.2	0.4		●	●		●			●	●		
			09T308-T43	8.8	0.8		●	●		●			●	●		
			120408-T43	12.0	0.8		●	●		●			●	●		
			120412-T43	11.6	1.2		●	●		●			●	●		

DC.. Single Side Cutting Edge Inserts

DC

(mm)

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°

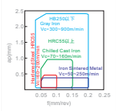
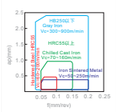
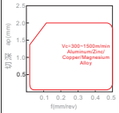
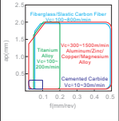
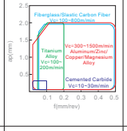
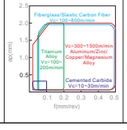


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

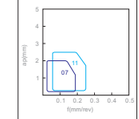
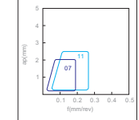
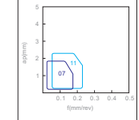
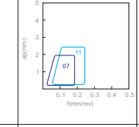
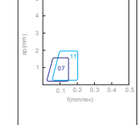
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			DCGT 070202 070204 070208 11T302 11T304 11T308	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●	● ● ● ● ● ●												
Finishing			DCGT 070202-T10 070204-T10 070208-T10 11T302-T10 11T304-T10 11T308-T10	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●	● ● ● ● ● ●												
Finishing			DCGT 070201 070202 070204 070208 11T302 11T304 11T308	7.7 7.5 7.3 6.8 11.4 11.2 10.8	0.1 0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ● ●													
Finishing			DCGT 070202-T11 070204-T11 070208-T11 11T302-T11 11T304-T11 11T308-T11	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●													
Finishing			DCGT 070202 070204 070208 11T302 11T304 11T308	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●													
Finishing			DCGT 070202-T10 070204-T10 070208-T10 11T302-T10 11T304-T10 11T308-T10	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●													

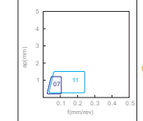
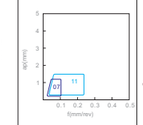
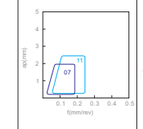
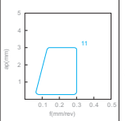
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			DCGT 070202-T11 070204-T11 070208-T11 11T302-T11 11T304-T11 11T308-T11 11T312-T11	7.5 7.3 6.8 11.4 11.2 10.8 10.4	0.2 0.4 0.8 0.2 0.4 0.8 1.2	● ● ● ● ● ● ●										
Finishing			DCGT 0702005R 070201R 070202R 070204R 11T3005R 11T301R 11T302R 11T304R	7.8 7.8 7.5 7.3 11.6 11.5 11.4 11.2	0.05 0.1 0.2 0.4 0.05 0.1 0.2 0.4	●● ●● ●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●● ●● ●●							
Finishing			DCGT 0702005L 070201L 070202L 070204L 11T3005L 11T301L 11T302L 11T304L	7.8 7.8 7.5 7.3 11.6 11.5 11.4 11.2	0.05 0.1 0.2 0.4 0.05 0.1 0.2 0.4	●● ●● ●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●● ●● ●●							
精加工 Finishing			DCGT 070201ER-T40 070202ER-T40 070204ER-T40 11T301ER-T40 11T302ER-T40 11T304ER-T40	7.8 7.5 7.3 11.5 11.4 11.2	0.1 0.2 0.4 0.1 0.2 0.4	●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●●							
Finishing			DCGT 070201EL-T40 070202EL-T40 070204EL-T40 11T301EL-T40 11T302EL-T40 11T304EL-T40	7.8 7.5 7.3 11.5 11.4 11.2	0.1 0.2 0.4 0.1 0.2 0.4	●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●●							
Finishing		R-H L-H	DCGT 070201R/L-T41 070202R/L-T41 070204R/L-T41 11T301R/L-T41 11T302R/L-T41 11T304R/L-T41	7.8 7.5 7.3 11.5 11.4 11.2	0.1 0.2 0.4 0.1 0.2 0.4	●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●●							

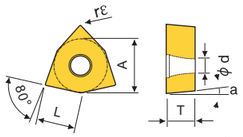
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			DCMT 070202-T42 070204-T42 070208-T42 11T302-T42 11T304-T42 11T308-T42	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8		●● ●● ●● ●● ●● ●●				●● ●● ●● ●● ●● ●●					
Finishing			DCMT 070202-T30 070204-T30 11T302-T30 11T304-T30 11T308-T30	7.5 7.3 11.4 11.2 10.8	0.2 0.4 0.2 0.4 0.8	● ● ● ● ●					●● ●● ●● ●● ●●				
Semi-Finishing – Roughing			DCMT 070204-T23 070208-T23 11T304-T23 11T308-T23	7.3 6.8 11.2 10.8	0.4 0.8 0.4 0.8		●● ●● ●● ●●				●●●● ●●●● ●●●● ●●●●					
Semi-Finishing			DCMT 070204-T21 070208-T21 11T304-T21 11T308-T21	7.3 6.8 11.2 10.8	0.4 0.8 0.4 0.8	● ● ● ●				● ● ● ●		● ● ● ●				
Semi-Finishing – Roughing			DCMT 070202-T24 070204-T24 070208-T24 11T302-T24 11T304-T24 11T308-T24	7.5 7.3 6.8 11.4 11.2 10.8	0.2 0.4 0.8 0.2 0.4 0.8		●● ●● ●● ●● ●● ●●				●●●● ●●●● ●●●● ●●●● ●●●● ●●●●					
Semi-Finishing			DCMT 070204-T17 070208-T17 11T304-T17 11T308-T17	7.3 6.8 11.2 10.8	0.4 0.8 0.4 0.8	● ● ● ●				●● ●● ●● ●●		●● ●● ●● ●●				
Semi-Finishing – Roughing			DCMT 070204 070208 11T304 11T308	7.3 6.8 11.2 10.8	0.4 0.8 0.4 0.8	● ● ● ●				●● ●● ●● ●●		●●●●● ●●●●● ●●●●● ●●●●●				
Semi-Finishing – Roughing			DCMT 070204-T44 070208-T44 11T304-T44 11T308-T44	7.3 6.8 11.2 10.8	0.4 0.8 0.4 0.8		●● ●● ●● ●●				●●●●● ●●●●● ●●●●● ●●●●●					
Roughing			DCMT 11T304-T43 11T308-T43 11T312-T43	11.2 10.8 10.4	0.4 0.8 1.2		●● ●● ●●			● ● ●		●● ●● ●●				

RC/SC/WB.. Single Side Cutting Edge Inserts

WB

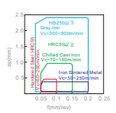
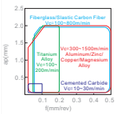
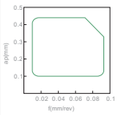
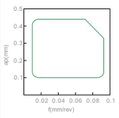


(mm)

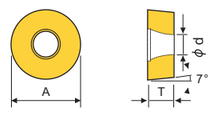
Model	A	T	ϕd	a
WB..0601..	3.97	1.59	2.3	5°
WB..0802..	4.76	2.38	2.3	5°

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
P	Steel	◐	●		✕	◐	✕	✕	◐	●		
M	Stainless Steel	◐	◐					✠	◐	◐		
K	Iron	◐	●					✕			✕	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood					◐						
S	Carbide/Powder Metallurgy							✕	◐	●		
H	Titanium/Superalloy/Carbon Fiber							✕	◐	●		

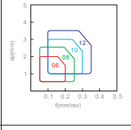
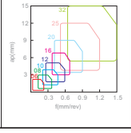
Application	Cutting Parameter	Product Image	Specification	Dimension L	Dimension A	Dimension T	Dimension ϕd	Dimension rε	Cutting Parameter ap(mm)	Cutting Parameter f(mm/rev)	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
Finishing			WBGT 060102 060104	2.6 2.3	3.97 3.97	1.59 1.59	2.3 2.3	0.2 0.4			● ●	● ●									
Finishing			WBGT 060102 060104	2.6 2.3	3.97 3.97	1.59 1.59	2.3 2.3	0.2 0.4			● ●										
Finishing			WBGT 060101R 060102R 060104R	2.7 2.6 2.3	3.97 3.97 3.97	1.59 1.59 1.59	2.3 2.3 2.3	0.1 0.2 0.4	0.1-0.3 0.1-0.4 0.1-0.5	0.01-0.05 0.01-0.06 0.01-0.08					●● ●● ●●					●● ●● ●●	
Finishing			WBGT 060101L 060102L 060104L	2.7 2.6 2.3	3.97 3.97 3.97	1.59 1.59 1.59	2.3 2.3 2.3	0.1 0.2 0.4	0.1-0.3 0.1-0.4 0.1-0.5	0.01-0.05 0.01-0.06 0.01-0.08					●● ●● ●●					●● ●● ●●	

RC

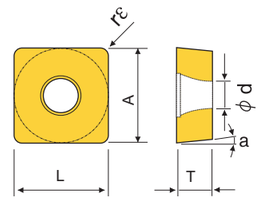


Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	Dimension L	Dimension A	Dimension T	Dimension ϕd	Dimension rε	Cutting Parameter ap(mm)	Cutting Parameter f(mm/rev)	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			RCGT 0602MO-T11 0803MO-T11 1003MO-T11 10T3MO-T11 1204MO-T11	- - - - -	6.0 8.0 10.0 10.0 12.0	2.38 3.18 3.18 3.97 4.76	2.8 3.35 4.0 4.4 4.4	- - - - -	0.5-2.0 0.5-2.5 1.0-3.0 1.0-3.0 1.0-3.5	0.05-0.2 0.05-0.25 0.1-0.3 0.1-0.3 0.1-0.35	● ● ● ● ●									
Semi-Finishing – Roughing			RCMX 0602MO 0803MO 1003MO 10T3MO 1204MO 1606MO 2006MO 2507MO 3209MO	- - - - - - - - -	6.0 8.0 10.0 10.0 12.0 16.0 20.0 25.0 32.0	2.38 3.18 3.18 3.97 4.76 6.35 6.35 7.94 9.52	2.8 3.35 3.6 3.6 4.2 5.2 6.5 7.25 9.55	- - - - - - - - -	0.5-1.5 0.5-2.0 1.5-4.0 1.5-4.0 2.5-5.0 3.0-7.0 3.5-9.0 4.0-12.0 5.0-15.0	0.1-0.3 0.2-0.4 0.25-0.5 0.25-0.5 0.3-0.6 0.4-0.7 0.48-0.9 0.55-1.2 0.65-1.5	●● ●● ●● ●● ●● ●● ●● ●● ●●			●● ●● ●● ●● ●● ●● ●● ●● ●●		● ● ● ● ● ● ● ● ●								

SC



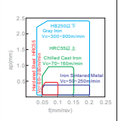
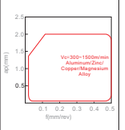
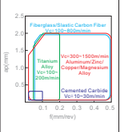
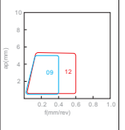
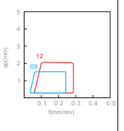
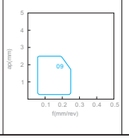
(mm)

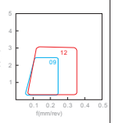
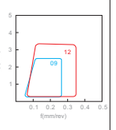
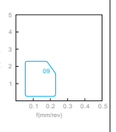
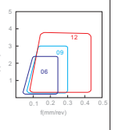
Model	A	T	ϕd	a
SC..09T3..	9.525	3.97	4.4	7°
SC..1204..	12.7	4.76	5.5	7°

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30
Finishing			SCGT 09T302 09T304 09T308 120402 120404 120408	9.5 9.1 8.7 12.7 12.3 11.9	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●	● ● ● ● ● ●									
Finishing			SCGT 09T302 09T304 09T308 120402 120404 120408	9.5 9.1 8.7 12.7 12.3 11.9	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●										
Finishing			SCGW 09T302 09T304 09T308 120402 120404 120408	9.5 9.1 8.7 12.7 12.3 11.9	0.2 0.4 0.8 0.2 0.4 0.8	● ● ● ● ● ●										
Finishing – Semi-Finishing			SCGT 09T302-T11 09T304-T11 09T308-T11 120404-T11 120408-T11	9.3 9.1 8.7 12.3 11.9	0.2 0.4 0.8 0.4 0.8		● ● ● ● ●									
Finishing			SCMT 09T304-T42 09T308-T42 120404-T42 120408-T42	9.1 8.7 12.3 11.9	0.4 0.8 0.4 0.8			●● ●● ●● ●●	●● ●● ●● ●●							
Semi-Finishing			SCMT 09T304-T21 09T308-T21	9.1 8.7	0.4 0.8	● ●		● ●		● ●						

Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Semi-Finishing – Roughing			SCMT 09T304-T23 09T308-T23 120404-T23 120408-T23 120412-T23	9.1 8.7 12.3 11.9 11.5	0.4 0.8 0.4 0.8 1.2	●● ●● ●● ●● ●●		●● ●● ●● ●● ●●	●● ●● ●● ●● ●●	●● ●● ●● ●● ●●					
Semi-Finishing – Roughing			SCMT 09T304-T24 09T308-T24 120404-T24 120408-T24	9.1 8.7 12.3 11.9	0.4 0.8 0.4 0.8	●● ●● ●● ●●		●● ●● ●● ●●	●● ●● ●● ●●	●● ●● ●● ●●						
Semi-Finishing			SCMT 09T304-T17 09T308-T17	9.1 8.7	0.4 0.8	● ●		●● ●●		●● ●●						
Roughing			SCMT 09T304-T43 09T308-T43 120404-T43 120408-T43 120412-T43	9.1 8.7 12.3 11.9 11.5	0.4 0.8 0.4 0.8 1.2	●● ●● ●● ●● ●●		●● ●● ●● ●● ●●	●● ●● ●● ●● ●●							

TB/TC/TP.. Single Side Cutting Edge Inserts

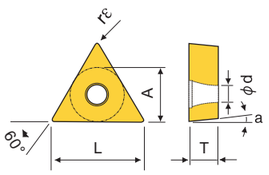
T..

(mm)

Model	A	T	ϕd	a
TB..0601..	3.97	1.59	2.16	5°

Model	A	T	ϕd	a
TC..0902..	5.56	2.38	2.5	7°
TC..1102..	6.35	2.38	2.8	7°
TC..16T3..	9.525	3.97	4.4	7°

Model	A	T	ϕd	a
TP..0802..	4.76	2.38	2.3	11°
TP..0902..	5.56	2.38	3.0	11°
TP..1102..	6.35	2.38	3.4	11°
TP..1103..	6.35	3.18	3.4	11°
TP..1604..	9.525	4.76	4.4	11°

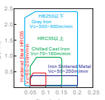
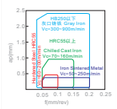
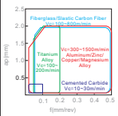
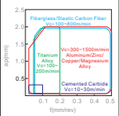


(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

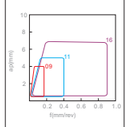
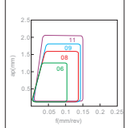
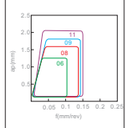
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			TBGT 060102	6.4	0.2	●	●												
			060104	5.8	0.4	●	●												
			TCGT 090202	9.1	0.2	●	●												
			090204	8.6	0.4	●	●												
			090208	7.6	0.8	●	●												
			110202	10.5	0.2	●	●												
			110204	10.0	0.4	●	●												
			110208	9.0	0.8	●	●												
			16T302	16.0	0.2	●	●												
			16T304	15.5	0.4	●	●												
			16T308	14.5	0.8	●	●												
			TPGT 080202	7.7	0.2	●	●												
			080204	7.2	0.4	●	●												
			090202	9.1	0.2	●	●												
			090204	8.6	0.4	●	●												
			090208	7.6	0.8	●	●												
			110302	10.5	0.2	●	●												
			110304	10.0	0.4	●	●												
			110308	9.0	0.8	●	●												
Finishing			TCGT 16T302-T34	16.0	0.2	●	●												
			16T304-T34	15.5	0.4	●	●												
			16T308-T34	14.5	0.8	●	●												
			TPGT 110302-T34	10.5	0.2	●	●												
			110304-T34	10.0	0.4	●	●												
			110308-T34	9.0	0.8	●	●												
Finishing			TBGW 060102	6.4	0.2	●													
			060104	5.8	0.4	●													
			TCGW 090202	9.1	0.2	●													
			090204	8.6	0.4	●													
			090208	7.6	0.8	●													
			110202	10.5	0.2	●													
			110204	10.0	0.4	●													
			110208	9.0	0.8	●													
			16T302	16.0	0.2	●													
			16T304	15.5	0.4	●													
			16T308	14.5	0.8	●													
			TPGW 080202	7.7	0.2	●													
			080204	7.2	0.4	●													
			090202	9.1	0.2	●													
			090204	8.6	0.4	●													
			090208	7.6	0.8	●													
			110302	10.5	0.2	●													
			110304	10.0	0.4	●													
			110308	9.0	0.8	●													
Finishing			TCGT 16T302-T34	16.0	0.2	●													
			16T304-T34	15.5	0.4	●													
			16T308-T34	14.5	0.8	●													
			TPGT 110302-T34	10.5	0.2	●													
			110304-T34	10.0	0.4	●													
			110308-T34	9.0	0.8	●													

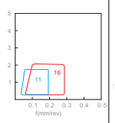
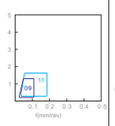
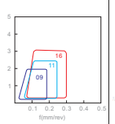
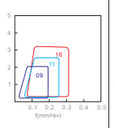
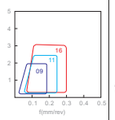
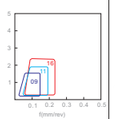
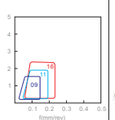
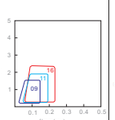
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing – Semi-Finishing			TCGT 090202	9.1	0.2		●									
			090204	8.6	0.4		●									
			090208	7.6	0.8		●									
			110202	10.5	0.2		●									
			110204	10.0	0.4		●									
			110208	9.0	0.8		●									
			16T302	16.0	0.2		●									
			16T304	15.5	0.4		●									
			16T308	14.5	0.8		●									
			16T312	13.5	1.2		●									
			16T316	12.5	1.6		●									
			16T325	10.0	2.5		●									
			TPGT 090202	9.1	0.2		●									
			090204	8.6	0.4		●									
			090208	7.6	0.8		●									
			110302	10.5	0.2		●									
			110304	10.0	0.4		●									
			110308	9.0	0.8		●									
Finishing			TBGT 060102L	6.4	0.2	●	●				●	●				
			060104L	5.8	0.4	●	●				●	●				
			TCGT 090202L	9.1	0.2	●	●				●	●				
			090204L	8.6	0.4	●	●				●	●				
			090208L	7.6	0.8	●	●				●	●				
			110202L	10.5	0.2	●	●				●	●				
			110204L	10.0	0.4	●	●				●	●				
			110208L	9.0	0.8	●	●				●	●				
			TPGT 080202L	7.7	0.2	●	●				●	●				
			080204L	7.2	0.4	●	●				●	●				
			090202L	9.1	0.2	●	●				●	●				
			090204L	8.6	0.4	●	●				●	●				
			090208L	7.6	0.8	●	●				●	●				
			110302L	10.5	0.2	●	●				●	●				
			110304L	10.0	0.4	●	●				●	●				
			110308L	9.0	0.8	●	●				●	●				
Finishing			TBGT 060102R	6.4	0.2	●	●				●	●				
			060104R	5.8	0.4	●	●				●	●				
			TCGT 090202R	9.1	0.2	●	●				●	●				
			090204R	8.6	0.4	●	●				●	●				
			090208R	7.6	0.8	●	●				●	●				
			110202R	10.5	0.2	●	●				●	●				
			110204R	10.0	0.4	●	●				●	●				
			110208R	9.0	0.8	●	●				●	●				
			TPGT 080202R	7.7	0.2	●	●				●	●				
			080204R	7.2	0.4	●	●				●	●				
			090202R	9.1	0.2	●	●				●	●				
			090204R	8.6	0.4	●	●				●	●				
			090208R	7.6	0.8	●	●				●	●				
			110302R	10.5	0.2	●	●				●	●				
			110304R	10.0	0.4	●	●				●	●				
			110308R	9.0	0.8	●	●				●	●				

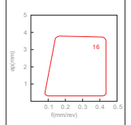
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel	◐	●		✕	◐	✕	✕	◐	●		
M	Stainless Steel	◐	●				✕	◐	◐	●		
K	Iron	◐	●				✕				✕	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood			◐								
S	Carbide/Powder Metallurgy							✕	◐	●		
H	Titanium/Superalloy/Carbon Fiber							✕	◐	●		

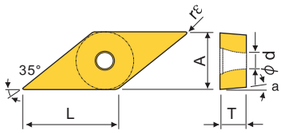
Application	Cutting Parameter	Product Image	Specification	L	rε	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			TCMT 110202-T42	10.5	0.2		●	●			●	●				
			110204-T42	10.0	0.4		●	●			●	●				
			16T304-T42	15.5	0.4		●	●			●	●				
			16T308-T42	14.5	0.8		●	●			●	●				
Finishing			TPMT 090204-T30	8.6	0.4	●						●				
			110304-T30	10.0	0.4	●						●				
Semi-Finishing – Roughing			TCMT 090204-T23	8.6	0.4		●	●			●	●	●	●		
			090208-T23	7.6	0.8		●	●			●	●	●	●		
			110204-T23	10.0	0.4		●	●			●	●	●	●		
			110208-T23	9.0	0.8		●	●			●	●	●	●		
			16T304-T23	15.5	0.4		●	●			●	●	●	●		
			16T308-T23	14.5	0.8		●	●			●	●	●	●		
			16T312-T23	13.5	1.2		●	●			●	●	●	●		
Semi-Finishing – Roughing			TCMT 090204-T24	8.6	0.4		●	●	●	●	●	●				
			090208-T24	7.6	0.8		●	●	●	●	●	●				
			110204-T24	10.0	0.4		●	●	●	●	●	●				
			110208-T24	9.0	0.8		●	●	●	●	●	●				
			16T304-T24	15.5	0.4		●	●	●	●	●	●				
			16T308-T24	14.5	0.8		●	●	●	●	●	●				
			16T312-T24	13.5	1.2		●	●	●	●	●	●				
Semi-Finishing – Roughing			TCMT 090204	8.6	0.4		●	●		●	●	●	●			
			090208	7.6	0.8		●	●		●	●	●	●			
			110204	10.0	0.4		●	●		●	●	●	●			
			110208	9.0	0.8		●	●		●	●	●	●			
			16T304	15.5	0.4		●	●		●	●	●	●			
			16T308	14.5	0.8		●	●		●	●	●	●			
			16T312	13.5	1.2		●	●		●	●	●	●			
Semi-Finishing			TCMT 090204-T44	7.6	0.8	●		●	●		●	●				
			110204-T44	10.0	0.4	●		●	●		●	●				
			110208-T44	9.0	0.8	●		●	●		●	●				
			16T304-T44	15.5	0.4	●		●	●		●	●				
			16T308-T44	14.5	0.8	●		●	●		●	●				
Semi-Finishing			TCMT 090202-T17	9.1	0.2	●		●	●		●	●				
			090204-T17	8.6	0.4	●		●	●		●	●				
			110202-T17	10.5	0.2	●		●	●		●	●				
			110204-T17	10.0	0.4	●		●	●		●	●				
			110208-T17	9.0	0.8	●		●	●		●	●				
			16T304-T17	15.5	0.4	●		●	●		●	●				
			16T308-T17	14.5	0.8	●		●	●		●	●				
Semi-Finishing			TCMT 090202-T21	9.1	0.2	●		●	●		●	●				
			090204-T21	8.6	0.4	●		●	●		●	●				
			110202-T21	10.5	0.2	●		●	●		●	●				
			110204-T21	10.0	0.4	●		●	●		●	●				
			110208-T21	9.0	0.8	●		●	●		●	●				
			16T304-T21	15.5	0.4	●		●	●		●	●				
			16T308-T21	14.5	0.8	●		●	●		●	●				

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Roughing			TCMT 16T304-T43	15.5	0.4		●	●		●			●	●		
			16T308-T43	14.5	0.8		●	●		●			●	●		
			16T312-T43	13.5	1.2		●	●		●			●	●		

VB



(mm)

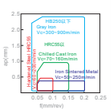
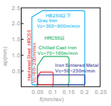
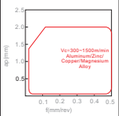
Model	A	T	ϕd	a
VB..1103..	6.35	3.18	2.8	5°
VB..1604..	9.525	4.76	4.4	5°
VC..1103	6.35	3.18	2.8	7°
VC..1604..	9.525	4.76	4.4	7°
VC..2205..	12.7	5.56	5.6	7°

(Cutting Speed): m/min

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

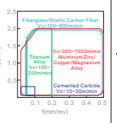
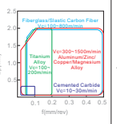
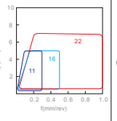
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			VBGT 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	●	●												
			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	●	●												
Finishing			VBGT 110302-T10	11.0	0.2	●	●												
			110304-T10	10.0	0.4	●	●												
			110308-T10	9.0	0.8	●	●												
			160402-T10	16.1	0.2	●	●												
			160404-T10	15.6	0.4	●	●												
			160408-T10	14.6	0.8	●	●												
			VCGT 110302-T10	11.0	0.2	●	●												
			110304-T10	10.0	0.4	●	●												
			110308-T10	9.0	0.8	●	●												
			160402-T10	16.1	0.2	●	●												
			160404-T10	15.6	0.4	●	●												
			160408-T10	14.6	0.8	●	●												
Finishing			VBGW 110301	11.0	0.1	●	●												
			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	●	●												
			160412	13.5	1.2	●	●												
			VCGW 110301	11.0	0.1	●	●												
			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	●	●												
			160412	13.5	1.2	●	●												

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

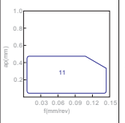
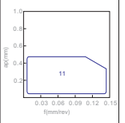
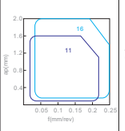
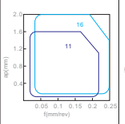
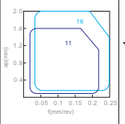
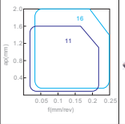
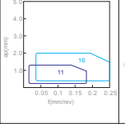
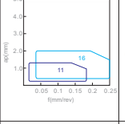
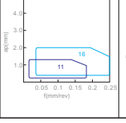
		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel				●										
M	Stainless Steel														
K	Iron				●										
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●					◐								
S	Carbide/Powder Metallurgy	◐													
H	Titanium/Superalloy/Carbon Fiber	◐													

Application	Cutting Parameter	Product Image	Specification	L	rε	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			VBGT 110302-T11	11.0	0.2	●													
			110304-T11	10.0	0.4	●													
			110308-T11	9.0	0.8	●													
			160402-T11	16.1	0.2	●													
			160404-T11	15.6	0.4	●													
			160408-T11	14.6	0.8	●													
			VCGT 110302-T11	11.0	0.2	●													
			110304-T11	10.0	0.4	●													
			110308-T11	9.0	0.8	●													
			160402-T11	16.1	0.2	●													
			160404-T11	15.6	0.4	●													
			160408-T11	14.6	0.8	●													
Finishing			VBGT 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	●													
			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	●													
Finishing – Semi-Finishing			VBGT 110302-T11	11.0	0.2		●												
			110304-T11	10.0	0.4		●												
			110308-T11	9.0	0.8		●												
			160402-T11	16.1	0.2		●												
			160404-T11	15.6	0.4		●												
			160408-T11	14.6	0.8		●												
			VCGT 110302-T11	11.0	0.2		●												
			110304-T11	10.0	0.4		●												
			110308-T11	9.0	0.8		●												
			160402-T11	16.1	0.2		●												
			160404-T11	15.6	0.4		●												
			160408-T11	14.6	0.8		●												
			160412-T11	13.6	1.2		●												
			220516-T11	18.0	1.6		●												
			220525-T11	15.6	2.5		●												
			220530-T11	14.3	3.0		●												

VB/VC.. Single Side Cutting Edge Inserts

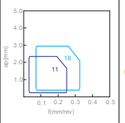
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			VBGT 1103005R-T45	11.0	0.05	●	●				●	●			
			110301R-T45	11.0	0.1	●	●				●	●			
			110302R-T45	11.0	0.2	●	●				●	●			
			110304R-T45	10.0	0.4	●	●				●	●			
			VCGT 1103005R-T45	11.0	0.05	●	●				●	●			
			110301R-T45	11.0	0.1	●	●				●	●			
			110302R-T45	11.0	0.2	●	●				●	●			
			110304R-T45	10.0	0.4	●	●				●	●			
Finishing			VBGT 1103005L-T45	11.0	0.05	●	●				●	●			
			110301L-T45	11.0	0.1	●	●				●	●			
			110302L-T45	11.0	0.2	●	●				●	●			
			110304L-T45	10.0	0.4	●	●				●	●			
			VCGT 1103005L-T45	11.0	0.05	●	●				●	●			
			110301L-T45	11.0	0.1	●	●				●	●			
			110302L-T45	11.0	0.2	●	●				●	●			
			110304L-T45	10.0	0.4	●	●				●	●			
Finishing			VBGT 1103005R-T46	11.0	0.05	●	●				●	●			
			110301R-T46	11.0	0.1	●	●				●	●			
			110302R-T46	11.0	0.2	●	●				●	●			
			110304R-T46	10.0	0.4	●	●				●	●			
			160404R-T46	15.6	0.4	●	●				●	●			
			160408R-T46	14.6	0.8	●	●				●	●			
			VCGT 1103005R-T46	11.0	0.05	●	●				●	●			
			110301R-T46	11.0	0.1	●	●				●	●			
			110302R-T46	11.0	0.2	●	●				●	●			
			110304R-T46	10.0	0.4	●	●				●	●			
Finishing			VBGT 1103005L-T46	11.0	0.05	●	●				●	●			
			110301L-T46	11.0	0.1	●	●				●	●			
			110302L-T46	11.0	0.2	●	●				●	●			
			110304L-T46	10.0	0.4	●	●				●	●			
			160404L-T46	15.6	0.4	●	●				●	●			
			160408L-T46	14.6	0.8	●	●				●	●			
			VCGT 1103005L-T46	11.0	0.05	●	●				●	●			
			110301L-T46	11.0	0.1	●	●				●	●			
			110302L-T46	11.0	0.2	●	●				●	●			
			110304L-T46	10.0	0.4	●	●				●	●			
Finishing			VBGT 1103005R-T41	11.0	0.05	●	●				●	●			
			110301R-T41	11.0	0.1	●	●				●	●			
			110302R-T41	11.0	0.2	●	●				●	●			
			110304R-T41	10.0	0.4	●	●				●	●			
			160404R-T41	15.6	0.4	●	●				●	●			
			160408R-T41	14.6	0.8	●	●				●	●			
			VCGT 1103005R-T41	11.0	0.05	●	●				●	●			
			110301R-T41	11.0	0.1	●	●				●	●			
			110302R-T41	11.0	0.2	●	●				●	●			
			110304R-T41	10.0	0.4	●	●				●	●			
Finishing			VBGT 1103005L-T41	11.0	0.05	●	●				●	●			
			110301L-T41	11.0	0.1	●	●				●	●			
			110302L-T41	11.0	0.2	●	●				●	●			
			110304L-T41	10.0	0.4	●	●				●	●			
			160404L-T41	15.6	0.4	●	●				●	●			
			160408L-T41	14.6	0.8	●	●				●	●			
			VCGT 1103005L-T41	11.0	0.05	●	●				●	●			
			110301L-T41	11.0	0.1	●	●				●	●			
			110302L-T41	11.0	0.2	●	●				●	●			
			110304L-T41	10.0	0.4	●	●				●	●			
Finishing			VBMT 110302-T42	11.0	0.2			●	●		●	●			
			110304-T42	10.0	0.4			●	●		●	●			
			160404-T42	15.6	0.4			●	●		●	●			
			160408-T42	14.6	0.8			●	●		●	●			
			VCMT 110302-T42	11.0	0.2			●	●		●	●			
			110304-T42	10.0	0.4			●	●		●	●			
			160404-T42	15.6	0.4			●	●		●	●			
			160408-T42	14.6	0.8			●	●		●	●			
Semi-Finishing			VBMT 110302-T17	11.0	0.2	●	●	●		●	●	●			
			110304-T17	10.0	0.4	●	●	●		●	●	●			
			110308-T17	9.0	0.8	●	●	●		●	●	●			
			160404-T17	15.6	0.4	●	●	●		●	●	●			
			160408-T17	14.6	0.8	●	●	●		●	●	●			
			VCMT 110302-T17	11.0	0.2	●	●	●		●	●	●			
			110304-T17	10.0	0.4	●	●	●		●	●	●			
			110308-T17	9.0	0.8	●	●	●		●	●	●			
			160404-T17	15.6	0.4	●	●	●		●	●	●			
			160408-T17	14.6	0.8	●	●	●		●	●	●			
Finishing			VBMT 110302-T21	11.0	0.2	●	●	●		●	●	●			
			110304-T21	10.0	0.4	●	●	●		●	●	●			
			110308-T21	9.0	0.8	●	●	●		●	●	●			
			160404-T21	15.6	0.4	●	●	●		●	●	●			
			160408-T21	14.6	0.8	●	●	●		●	●	●			
			VCMT 110302-T21	11.0	0.2	●	●	●		●	●	●			
			110304-T21	10.0	0.4	●	●	●		●	●	●			
			110308-T21	9.0	0.8	●	●	●		●	●	●			
			160404-T21	15.6	0.4	●	●	●		●	●	●			
			160408-T21	14.6	0.8	●	●	●		●	●	●			

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
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	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
Finishing			VBMT 110302-T44	11.0	0.2	●		●	●		●	●			
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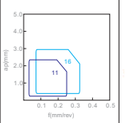
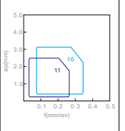
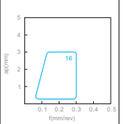
			110308-T44	9.0	0.8	●		●	●		●	●			
			160404-T44	15.6	0.4	●		●	●		●	●			
			160408-T44	14.6	0.8	●		●	●		●	●			
			VCMT 110302-T44	11.0	0.2	●		●	●		●	●			
			110304-T44	10.0	0.4	●		●	●		●	●			
			110308-T44	9.0	0.8	●		●	●		●	●			
			160404-T44	15.6	0.4	●		●	●		●	●			
			160408-T44	14.6	0.8	●		●	●		●	●			
Semi-Finishing			VBMT 110304-T23	10.0	0.4			●	●		●	●		●	
			110308-T23	9.0	0.8			●	●		●	●		●	
			160404-T23	15.6	0.4			●	●		●	●		●	
			160408-T23	14.6	0.8			●	●		●	●		●	
			VCMT 110304-T23	10.0	0.4			●	●		●	●		●	
			110308-T23	9.0	0.8			●	●		●	●		●	
			160404-T23	15.6	0.4			●	●		●	●		●	
			160408-T23	14.6	0.8			●	●		●	●		●	
Semi-Finishing			VBMT 110304-T24	10.0	0.4			●	●	●	●	●			
			110308-T24	9.0	0.8			●	●	●	●	●			
			160404-T24	15.6	0.4			●	●	●	●	●			
			160408-T24	14.6	0.8			●	●	●	●	●			
			VCMT 110304-T24	10.0	0.4			●	●	●	●	●			
			110308-T24	9.0	0.8			●	●	●	●	●			
			160404-T24	15.6	0.4			●	●	●	●	●			
			160408-T24	14.6	0.8			●	●	●	●	●			
Roughing			VBMT 160404-T43	15.6	0.4			●	●		●			●	●
			160408-T43	14.6	0.8			●	●		●			●	●
			160412-T43	13.5	1.2			●	●		●			●	●
			VCMT 160404-T43	15.6	0.4			●	●		●			●	●
			160408-T43	14.6	0.8			●	●		●			●	●
			160412-T43	13.5	1.2			●	●		●			●	●

TGF/GBA.. Triangular Shallow Groove Processing

TGF

TGF32R.. TGF32L.. TGF32R..R.. TGF32L..R..

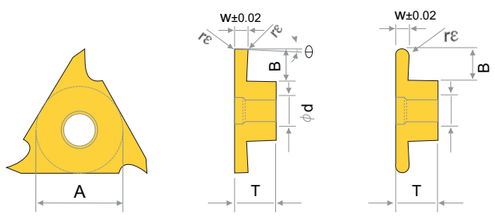


Fig.1 Fig.2

(Cutting Speed): m/min⁻¹ (mm)

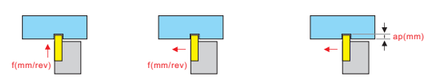
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
P	Steel	●	◐	◐		◐	◐	◐	✖	◐	◐	◐	◐
M	Stainless Steel				◔		◔	◐	◔	✖	◔	◔	◔
K	Iron	◐		◔		◔		◐		✖	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐		◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	◐								✖			◐
H	Titanium/Superalloy/Carbon Fiber	◐								✖			◐

Application	Specification	W±0.02	B	rε	A	T	ϕd	Fig	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
Grooving	TGF32 R/L 030-005	0.30	0.05	0.05	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	033-005	0.33													●	●	●		●		●
	040-005	0.40	1.25												●	●	●		●		●
	045-005	0.45													●	●	●		●		●
	050-005	0.50													●	●	●		●		●
	050L220	0.50	2.2												●	●	●		●		●
	055-005	0.55	1.25	0.05	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	060-005	0.60													●	●	●		●		●
	065-010	0.65	2.05	0.1											●	●	●		●		●
	070-010	0.70													●	●	●		●		●
	075-010	0.75													●	●	●		●		●
	080-010	0.80													●	●	●		●		●
	085-010	0.85													●	●	●		●		●
	090-010	0.90													●	●	●		●		●
	095-010	0.95													●	●	●		●		●
	100L330	1.00	3.3												●	●	●		●		●
	100-010	1.00	2.2	0.1	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	105-010	1.05													●	●	●		●		●
	110-010	1.10													●	●	●		●		●
	115-010	1.15													●	●	●		●		●
	120-010	1.20													●	●	●		●		●
	125-010	1.25													●	●	●		●		●
	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	0.15	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	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	2.4	0.15											●	●	●		●		●
	180-015	1.80													●	●	●		●		●
	185-015	1.85													●	●	●		●		●
	190-015	1.90	2.7												●	●	●		●		●
	195-015	1.95													●	●	●		●		●
	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	2.7	0.15	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	215-015	2.15													●	●	●		●		●
	220-015	2.20													●	●	●		●		●
	225-015	2.25													●	●	●		●		●
	230-015	2.30													●	●	●		●		●
	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	3.0	0.15	9.525	3.18	4.5	Fig.1	2°						●	●	●		●		●
	265-015	2.65													●	●	●		●		●
	270-015	2.70													●	●	●		●		●
	280-015	2.80													●	●	●		●		●
	290-015	2.90													●	●	●		●		●
	300-020	3.00	3.4	0.2											●	●	●		●		●
	320-020	3.20													●	●	●		●		●

Application	Specification	W±0.02	B	rε	A	T	ϕd	Fig	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
Grooving	TGF32 R/L 100-R050	1.00	2.2	0.50	9.525	3.18	4.5	Fig.2	2°						●	●	●		●		●
	150-R075	1.50	2.2	0.75											●	●	●		●		●
	200-R100	2.00	2.7	1.00											●	●	●		●		●
	250-R125	2.50	3.0	1.25											●	●	●		●		●
	300-R150	3.00	3.2	1.50											●	●	●		●		●



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

Application	Processed Material	TGF32R/L 033~055 T.1	T.2	T.3	TGF32R/L 055~095 T.1	T.2	T.3	TGF32R/L 100~145 T.1	T.2	T.3	TGF32R/L 150~250 T.1	T.2	T.3	TGF32R/L 255~320 T.1	T.2	T.3
P	Steel	0.01~0.05	~	~	0.02~0.07	~	~	0.03~0.08	0.03~0.06	0.02~0.2	0.03~0.1	0.03~0.09	0.02~0.3	0.03~0.12	0.03~0.1	0.02~0.3
M	Stainless Steel	0.01~0.04	~	~	0.02~0.06	~	~	0.03~0.07	0.02~0.05	0.02~0.2	0.03~0.1	0.02~0.08	0.02~0.3	0.03~0.1	0.02~0.09	0.02~0.3
K	Iron	0.01~0.04	~	~	0.02~0.06	~	~	0.03~0.08	0.02~0.05	0.02~0.2	0.03~0.1	0.02~0.08	0.02~0.3	0.03~0.12	0.02~0.09	0.02~0.3
N	Aluminum/Copper/Magnesium /Zinc/Plastic/Wood	0.01~0.05	~	~	0.02~0.07	~	~	0.03~0.08	0.03~0.06	0.02~0.2	0.03~0.12	0.03~0.12	0.02~0.3	0.03~0.15	0.03~0.15	0.02~0.3
S	Carbide/Powder Metallurgy	0.01~0.02	~	~	0.01~0.02	~	~	0.01~0.03	~	~	0.01~0.05	0.01~0.03	0.02~0.1	0.01~0.05	0.01~0.03	0.02~0.1
H	Titanium/Superalloy /Carbon Fiber	0.01~0.02	~	~	0.01~0.02	~	~	0.01~0.03	~	~	0.01~0.05	0.01~0.03	0.02~0.1	0.01~0.05	0.01~0.03	0.02~0.1

GBA

GBA43R.. GBA43L.. GBA43R..R.. GBA43L..R..

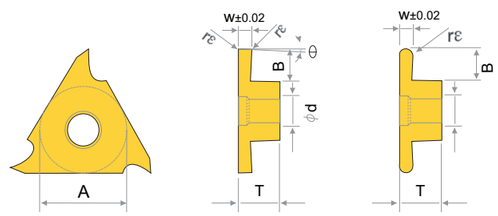


Fig.1 Fig.2

(Cutting Speed): m/min⁻¹ (mm)

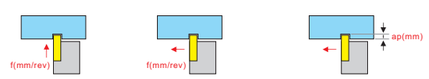
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
P	Steel	●	◐	◐		◐	◐	◐	✖	◐	◐	◐	◐
M	Stainless Steel				◔		◔	◐	◔	✖	◔	◔	◔
K	Iron	◐		◔		◔		◐		✖	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐		◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	◐								✖			◐
H	Titanium/Superalloy/Carbon Fiber	◐								✖			◐

Application	Specification	W±0.02	B	rε	A	T	ϕd	Fig	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
Grooving	GBA43 R/L 100-010	1.00	2.0	0.1	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	120-010	1.20													●	●	●		●		●
	125-010	1.25													●	●	●		●		●
	125-020	1.25	2.0	0.2											●	●	●		●		●
	140-020	1.40													●	●	●		●		●
	145-020	1.45													●	●	●		●		●
	150-010	1.50	3.5	0.1											●	●	●		●		●
	150-020	1.50	3.5	0.2											●	●	●		●		●
	170-020	1.70	3.5	0.2	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	175-020	1.75													●	●	●		●		●
	180-020	1.80													●	●	●		●		●
	185-020	1.85													●	●	●		●		●
	190-020	1.90													●	●	●		●		●
	195-020	1.95													●	●	●		●		●
	200-010	2.00	3.5	0.1											●	●	●		●		●
	200-020	2.00	3.5	0.2											●	●	●		●		●
	220-020	2.20	3.5	0.2	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	225-020	2.25													●	●	●		●		●
	230-020	2.30													●	●	●		●		●
	250-010	2.50	5.0	0.1											●	●	●		●		●
	250-030	2.50	5.0	0.3											●	●	●		●		●
	260-030	2.60	5.0												●	●	●		●		●
	265-030	2.65	5.0	0.3	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	270-030	2.70													●	●	●		●		●
	280-030	2.80													●	●	●		●		●
	290-030	2.90													●	●	●		●		●
	300-010	3.00	5.0	0.1											●	●	●		●		●
	300-030	3.00	5.0	0.3											●	●	●		●		●
	310-030	3.10	5.0	0.3	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	320-030	3.20													●	●	●		●		●
	325-030	3.25													●	●	●		●		●
	330-030	3.30													●	●	●		●		●
	340-030	3.40													●	●	●		●		●
	350-010	3.50	5.0	0.1											●	●	●		●		●
	350-030	3.50	5.0	0.3											●	●	●		●		●
	360-030	3.60	5.0	0.3	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	370-030	3.70													●	●	●		●		●
	380-030	3.80													●	●	●		●		●
	390-030	3.90													●	●	●		●		●
	400-010	4.00	5.0	0.1											●	●	●		●		●
	400-040	4.00	5.0	0.4											●	●	●		●		●
	410-040	4.10	5.0	0.4	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	420-040	4.20													●	●	●		●		●
	430-040	4.30													●	●	●		●		●
	440-040	4.40													●	●	●		●		●
	450-010	4.50	5.0	0.1											●	●	●		●		●
	450-040	4.50	5.0	0.4											●	●	●		●		●
	460-040	4.60	5.0	0.4	12.7	4.76	5.5	Fig.1	2°						●	●	●		●		●
	470-040	4.70													●	●	●		●		●
	480-040	4.80	5.0	0.4	12.7	5.00	5.5	Fig.1	2°						●	●	●		●		●
	490-040	4.90													●	●	●		●		●
	500-010	5.00	5.0	0.1											●	●	●		●		●
	500-040	5.00	5.0	0.4											●	●	●		●		●
	510-040	5.10	5.0	0.4	12.7	5.10	5.5	Fig.1	2°						●	●	●		●		●

Application	Specification	W±0.02	B	rε	A	T	ϕd	Fig	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK40	PMS31
Grooving	GBA43 R/L 100-R050	1.00	2.0	0.50	12.7	4.76	5.5	Fig.2	2°						●	●	●		●		●
	150-R075	1.50	3.5	0.75											●	●	●		●		●
	200-R100	2.00	3.5	1.00											●	●	●		●		●
	250-R125	2.50	4.0	1.25											●	●	●		●		●
	300-R150	3.00	4.0	1.50											●	●	●		●		●
	400-R200	4.00	5.0	2.00											●	●	●		●		●



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

Application	Processed Material	GBA43R/L 100~150 T.1	T.2	T.3	GBA43R/L 150~200 T.1	T.2	T.3	GBA43R/L 210~300 T.1	T.2	T.3	GBA43R/L 310~400 T.1	T.2	T.3	GBA43R/L 410~510 T.1	T.2	T.3
P	Steel	0.03~0.08	~	~	0.04~0.09	0.04~0.09	0.02~0.3	0.05~0.1	0.05~0.1	0.02~0.5	0.05~0.12	0.05~0.1	0.02~0.5	0.05~0.12	0.05~0.1	0.02~0.8
M	Stainless Steel	0.03~0.07	~	~	0.04~0.08	0.04~0.08	0.02~0.3	0.05~0.09	0.05~0.09	0.02~0.5	0.05~0.1	0.05~0.1	0.02~0.5	0.05~0.1	0.05~0.1	0.02~0.8
K	Iron	0.03~0.08	~	~	0.04~0.08	0.04~0.08	0.02~0.3	0.05~0.1	0.05~0.1	0.02~0.5	0.05~0.1	0.05~0.1	0.02~0.5	0.05~0.1	0.05~0.1	0.02~0.8
N	Aluminum/Copper/Magnesium /Zinc/Plastic/Wood	0.05~0.12	~	~	0.05~0.15	0.05~0.15	0.02~0.5	0.05~0.15	0.05~0.15	0.02~0.8	0.08~0.15	0.08~0.15	0.02~0.8	0.08~0.15	0.08~0.15	0.02~0.8
S	Carbide/Powder Metallurgy	0.01~0.03	~	~	0.02~0.05	~	~	0.03~0.07	0.01~0.04	0.01~0.1	0.03~0.08	0.03~0.08	0.01~0.1	0.03~0.08	0.03~0.08	0.01~0.1
H	Titanium/Superalloy /Carbon Fiber	0.01~0.03	~	~	0.02~0.05	~	~	0.03~0.07	0.01~0.04	0.01~0.1	0.03~0.08	0.03~0.08	0.01~0.1	0.03~0.08	0.03~0.08	0.01~0.1

T..

T..E..

Grooving

T..N..

Grooving

T..N..DM..

End Face Grooving

T..N..DM..R..

End Face Round Grooving

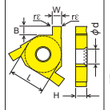
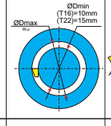
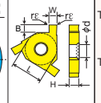
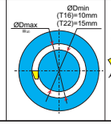
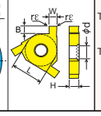
(Cutting Speed): m/min

(mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

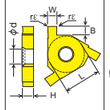
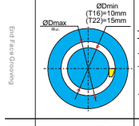
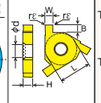
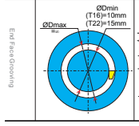
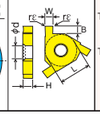
Cutting Environment: ● Stable Cutting; ◐ General Cutting; ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	Dimension W	B	r≤	L	H	ϕd	PCD1	CBN1	CBN2	N021	PMK25	PMK26	PMS35	PMK27	PMK30
Grooving			T11N 050	0.50	1.0	0.06	6.35	3.18	3.0				•	•	•		•	
			060	0.60	1.0	0.06							•	•	•		•	
			080	0.80	1.2	0.06							•	•	•		•	
			100	1.00	1.5	0.06							•	•	•		•	
			110	1.10	1.5	0.10							•	•	•		•	
			120	1.20	1.5	0.10							•	•	•		•	
			125	1.25	1.5	0.10							•	•	•		•	
			140	1.40	1.5	0.10							•	•	•		•	
			150	1.50	1.5	0.10							•	•	•		•	
			160	1.60	1.5	0.10							•	•	•		•	
			170	1.70	1.5	0.10							•	•	•		•	
			175	1.75	1.5	0.10							•	•	•		•	
			180	1.80	1.5	0.10							•	•	•		•	
			200	2.00	1.3	0.10							•	•	•		•	
			T16N 033	0.33	1.6	0.06	9.525	3.65	4.0				•	•	•		•	
			050	0.50	1.6	0.06							•	•	•		•	
			060	0.60	1.6	0.06							•	•	•		•	
			070	0.70	1.6	0.06							•	•	•		•	
			075	0.75	1.6	0.06							•	•	•		•	
			080	0.80	1.6	0.06							•	•	•		•	
			090	0.90	1.6	0.06							•	•	•		•	
			095	0.95	1.6	0.06							•	•	•		•	
			100	1.00	1.8	0.10							•	•	•		•	
			110	1.10	1.8	0.10							•	•	•		•	
			115	1.15	1.8	0.10							•	•	•		•	
			120	1.20	1.8	0.10							•	•	•		•	
			125	1.25	1.8	0.10							•	•	•		•	
			130	1.30	1.8	0.10							•	•	•		•	
			140	1.40	1.8	0.10							•	•	•		•	
			145	1.45	1.8	0.10							•	•	•		•	
			150	1.50	1.8	0.10							•	•	•		•	
			160	1.60	1.8	0.10							•	•	•		•	
			170	1.70	1.8	0.10							•	•	•		•	
			175	1.75	1.8	0.10							•	•	•		•	
			180	1.80	1.8	0.10							•	•	•		•	
			190	1.90	1.8	0.10							•	•	•		•	
			200	2.00	1.8	0.10							•	•	•		•	
			210	2.10	2.0	0.20							•	•	•		•	
			215	2.15	2.0	0.20							•	•	•		•	
			220	2.20	2.0	0.20							•	•	•		•	
			225	2.25	2.0	0.20							•	•	•		•	
			230	2.30	2.0	0.20							•	•	•		•	
			240	2.40	2.0	0.20							•	•	•		•	
			250	2.50	2.0	0.20							•	•	•		•	
			260	2.60	2.0	0.20							•	•	•		•	
			265	2.65	2.2	0.20							•	•	•		•	
			270	2.70	2.0	0.20							•	•	•		•	
			280	2.80	2.0	0.20							•	•	•		•	
			290	2.90	2.0	0.20							•	•	•		•	
			300	3.00	2.0	0.20							•	•	•		•	
End Face Grooving			T16N 150DM10	1.50	1.8	0.1	9.525	3.65	4.0				•	•	•		•	
			200DM10	2.00	2.2	0.1							•	•	•		•	
			250DM10	2.50	2.2	0.1							•	•	•		•	
			T22N 200DM15	2.00	3.0	0.1	12.7	4.76	5.0				•	•	•		•	
			250DM15	2.50	3.0	0.1							•	•	•		•	
			300DM15	3.00	3.0	0.1							•	•	•		•	
End Face Grooving			T16N 150DM10R075	1.50	2.0	0.75	9.525	3.65	4.0				•	•	•		•	
			200DM10R100	2.00	2.2	1.00							•	•	•		•	
			T22N 200DM15R100	2.00	3.0	1.00	12.7	4.76	5.0				•	•	•		•	
			250DM15R125	2.50	3.0	1.25							•	•	•		•	
			300DM15R150	3.00	3.0	1.50							•	•	•		•	

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												●							✕									

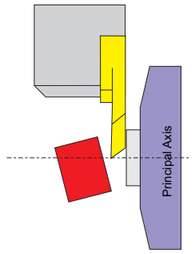
Application	Dimensioning	Product Image	Specification	Dimension W	B	r≤	L	H	ϕd	PCD1	CBN1	CBN2	N021	PMK25	PMK26	PMS35	PMK27	PMK30
Grooving			T11E 050	0.50	1.0	0.06	6.35	3.18	3.0			•	•	•		•		
			060	0.60	1.0	0.06						•	•	•		•		
			080	0.80	1.2	0.06						•	•	•		•		
			100	1.00	1.5	0.06						•	•	•		•		
			110	1.10	1.5	0.10						•	•	•		•		
			120	1.20	1.5	0.10						•	•	•		•		
			125	1.25	1.5	0.10						•	•	•		•		
			140	1.40	1.5	0.10						•	•	•		•		
			150	1.50	1.5	0.10						•	•	•		•		
			160	1.60	1.5	0.10						•	•	•		•		
			170	1.70	1.5	0.10						•	•	•		•		
			175	1.75	1.5	0.10						•	•	•		•		
			180	1.80	1.5	0.10						•	•	•		•		
			200	2.00	1.3	0.10						•	•	•		•		
			T16E 033	0.33	1.6	0.06	9.525	3.65	4.0			•	•	•		•		
			050	0.50	1.6	0.06						•	•	•		•		
			060	0.60	1.6	0.06						•	•	•		•		
			070	0.70	1.6	0.06						•	•	•		•		
			075	0.75	1.6	0.06						•	•	•		•		
			080	0.80	1.6	0.06						•	•	•		•		
			090	0.90	1.6	0.06						•	•	•		•		
			095	0.95	1.6	0.06						•	•	•		•		
			100	1.00	1.8	0.10						•	•	•		•		
			110	1.10	1.8	0.10						•	•	•		•		
			115	1.15	1.8	0.10						•	•	•		•		
			120	1.20	1.8	0.10						•	•	•		•		
			125	1.25	1.8	0.10						•	•	•		•		
			130	1.30	1.8	0.10						•	•	•		•		
			140	1.40	1.8	0.10						•	•	•		•		
			145	1.45	1.8	0.10						•	•	•		•		
			150	1.50	1.8	0.10						•	•	•		•		
			160	1.60	1.8	0.10						•	•	•		•		
			170	1.70	1.8	0.10						•	•	•		•		
			175	1.75	1.8	0.10						•	•	•		•		
			180	1.80	1.8	0.10						•	•	•		•		
			190	1.90	1.8	0.10						•	•	•		•		
			200	2.00	1.8	0.10						•	•	•		•		
			210	2.10	2.0	0.20						•	•	•		•		
			215	2.15	2.0	0.20						•	•	•		•		
			220	2.20	2.0	0.20						•	•	•		•		
			225	2.25	2.0	0.20						•	•	•		•		
			230	2.30	2.0	0.20						•	•	•		•		
			240	2.40	2.0	0.20						•	•	•		•		
			250	2.50	2.0	0.20						•	•	•		•		
			260	2.60	2.0	0.20						•	•	•		•		
			265	2.65	2.2	0.20						•	•	•		•		
			270	2.70	2.0	0.20						•	•	•		•		
			280	2.80	2.0	0.20						•	•	•		•		
			290	2.90	2.0	0.20						•	•	•		•		
			300	3.00	2.0	0.20						•	•	•		•		
End Face Grooving			T16E 150DM10	1.50	1.8	0.1	9.525	3.65	4.0			•	•	•		•		
			200DM10	2.00	2.2	0.1						•	•	•		•		
			250DM10	2.50	2.2	0.1						•	•	•		•		
			T22E 200DM15	2.00	3.0	0.1	12.7	4.76	5.0			•	•	•		•		
			250DM15	2.50	3.0	0.1						•	•	•		•		
			300DM15	3.00	3.0	0.1						•	•	•		•		
End Face Grooving			T16E 150DM10R075	1.50	2.0	0.75	9.525	3.65	4.0			•	•	•		•		
			200DM10R100	2.00	2.2	1.00						•	•	•		•		
			T22E 200DM15R100	2.00	3.0	1.00	12.7	4.76	5.0			•	•	•		•		
			250DM15R125	2.50	3.0	1.25						•	•	•		•		
			300DM15R150	3.00	3.0	1.50						•	•	•		•		

CTP/CTPA Small Parts Cut-off/Grooving Insert

1 How to select the R and L toolholder

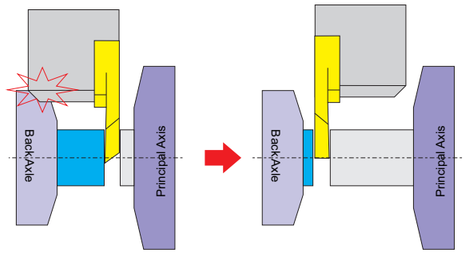
No back axle

①



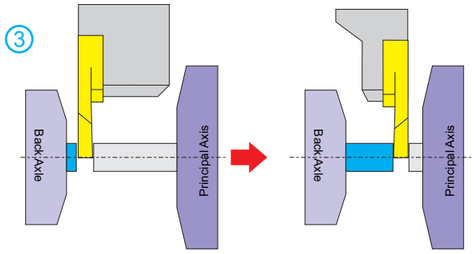
Recommended to use the R Toolholder when there is no back axle.
In order to reduce the residual tail pin, it is recommended to use a cutting knife with an angle at the tip.

②



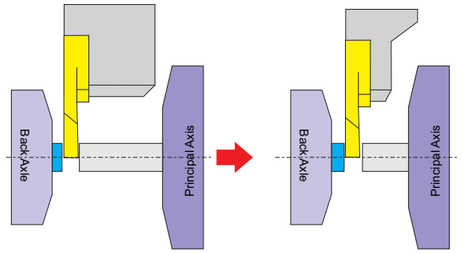
If the back axis interferes with the cutter rod during cutting, the L toolholder can be used. There is no residual tail pin. It is recommended to use a blade with no angle at the tip.

③



R-SUB type toolholder is recommended when rigidity is considered for small workpiece diameter.

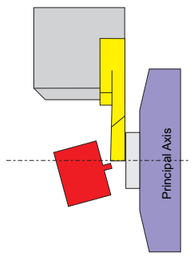
④



When the diameter of workpiece is small and the rigidity of workpiece is short, L-SUB type toolholder is recommended.

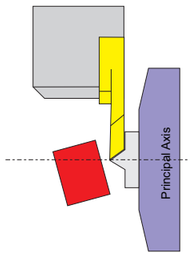
2 How to choose flat head / angle head

①



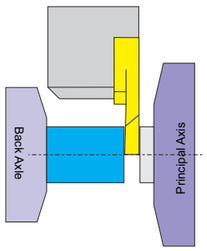
In the case of no back axis, using a flat head cutter without angle, the workpiece will leave a tail pin.

②



In the case of no back axis, using angle head cutter, the workpiece without tail pin.

③



In the case of a back shaft, use a flat head cutter without angle, and the workpiece will not leave a tail pin.However, when considering the deformation of cutting resistance in small workpiece processing, please select the tool tip with angle.

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.

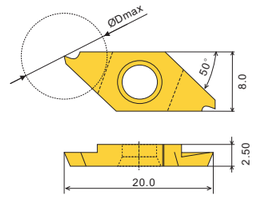
② Considering the impact during cutting and insufficient linear speed at the center of workpiece, it is recommended to reduce the feed before cutting (1-2mm) (to 50% of the original).

③ Try to avoid intermittent processing.

5 Recommended cutting parameters for grooving / cutting of small parts

Application	Processed Material	f(mm/rev) Cutting Parameter											
		CTP W(mm)						CTPA W(mm)					
		0.5	0.7	1.0	1.25	1.5	2.0	0.7	1.0	1.5	2.0	2.5	3.0
P	Steel	0.01~0.02	0.01~0.03	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	0.02~0.07	0.02~0.07	0.02~0.1	0.02~0.15
M	Stainless Steel	0.005~0.015	0.01~0.02	0.01~0.02	0.01~0.02	0.01~0.02	0.01~0.02	0.01~0.02	0.01~0.02	0.01~0.04	0.01~0.04	0.01~0.1	0.01~0.1
K	Iron	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.02~0.08	0.02~0.08	0.02~0.1	0.02~0.15
N	Aluminum/Copper/Magnesium /Zinc/Plastic/Wood	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.02~0.08	0.02~0.08	0.02~0.12	0.02~0.15
S	Carbide/Powder Metallurgy	0.003~0.007	0.003~0.008	0.003~0.01	0.003~0.015	0.003~0.015	0.003~0.015	0.003~0.01	0.003~0.015	0.003~0.015	0.005~0.02	0.005~0.025	0.005~0.03
H	Titanium/Superalloy /Carbon Fiber	0.003~0.007	0.003~0.008	0.003~0.01	0.003~0.015	0.003~0.015	0.003~0.015	0.003~0.01	0.003~0.015	0.003~0.015	0.005~0.02	0.005~0.025	0.005~0.03

CTP



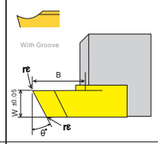
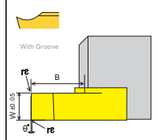
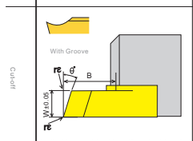
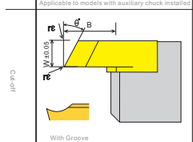
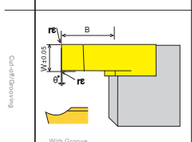
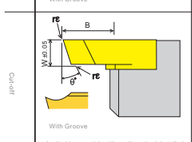
CTP
ØDmax=Ø5~13mm

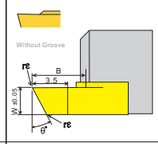
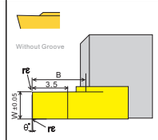
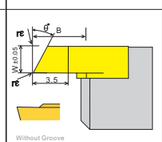
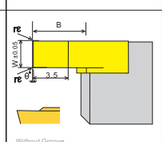
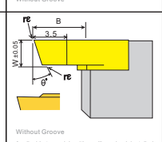
(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✕ Unstable Cutting

Application		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	●			✕

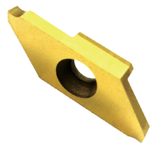
Application	Dimension and Shape	Specification	Dimension W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMK35	PMK27	PMK37	PMS31
Cut-off	 With Groove	CTP 05FR	0.5	2.8	0.03	15°				●	●	●				●		
		07FR	0.7	4.5	0.05	16°				●	●	●				●		
		10FR	1.0	6.7	0.05	16°				●	●	●				●		
		15FR	1.5	6.7	0.05	16°				●	●	●				●		
		20FR	2.0	6.7	0.05	16°				●	●	●				●		
Cut-off/Grooving	 With Groove	CTP 05FRN	0.5	2.8	0.03	0°				●	●	●				●		
		10FRN	1.0	6.7	0.05					●	●	●				●		
		15FRN	1.5	6.7	0.05					●	●	●				●		
		20FRN	2.0	6.7	0.05					●	●	●				●		
Cut-off	 With Groove Applicable to models with auxiliary chuck installed	CTP 10FRK	1.0	6.7	0.05	16°				●	●	●				●		
		15FRK	1.5							●	●	●				●		
		20FRK	2.0							●	●	●				●		
Cut-off	 With Groove	CTP 07FL	0.7	4.5	0.05	16°				●	●	●				●		
		10FL	1.0	6.7						●	●	●				●		
		15FL	1.5	6.7						●	●	●				●		
		20FL	2.0	6.7						●	●	●				●		
Cut-off/Grooving	 With Groove	CTP 05FLN	0.5	2.8	0.03	0°				●	●	●				●		
		10FLN	1.0	6.7	0.05					●	●	●				●		
		15FLN	1.5	6.7	0.05					●	●	●				●		
		20FLN	2.0	6.7	0.05					●	●	●				●		
Cut-off	 With Groove Applicable to models with auxiliary chuck installed	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°				●	●	●				●		

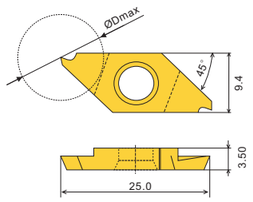
Application	Dimension and Shape	Specification	Dimension W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK37	PMS31
Cut-off	 Without Groove	CTP 10FRV	1.0	6.7	0.0	20°		●			●	●	●		●		
		15FRV	1.5					●			●	●	●		●		
		20FRV	2.0					●			●	●	●		●		
Cut-off/Grooving	 Without Groove	CTP 15FRNV	1.5	6.7	0.0	0°		●			●	●	●		●		
		20FRNV	2.0					●			●	●	●		●		
Cut-off	 Without Groove	CTP 10FLV	1.0	6.7	0.0	20°		●			●	●	●		●		
		15FLV	1.5					●			●	●	●		●		
		20FLV	2.0					●			●	●	●		●		
Cut-off/Grooving	 Without Groove	CTP 15FLNV	1.5	6.7	0.0	0°		●			●	●	●		●		
		20FLNV	2.0					●			●	●	●		●		
Cut-off	 Without Groove Applicable to models with auxiliary chuck installed	CTP 15FLKV	1.5	6.7	0.0	20°	●			●	●	●				●	

θ
☆θ Installation Angle For The Toolholder

CTPA/CTPW Small Parts Cut-off/Grooving Insert

CTPA





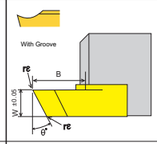
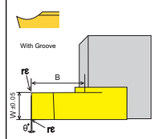
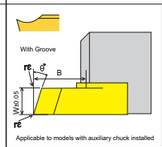
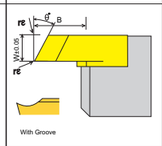
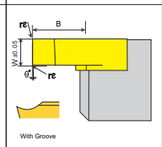
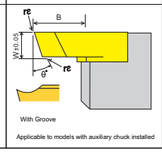
ØDmax=Ø9~18mm

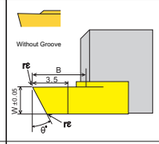
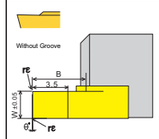
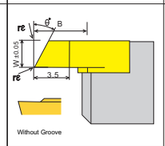
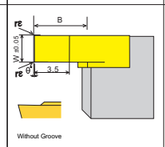
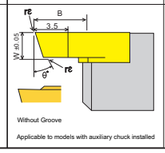
(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
P	Steel	●		◐	◐		◐	●	◐	✖	◐	◐	◐
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔	◔
K	Iron	●		◐		◐		✖	◐	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	◔	◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●								✖			●
H	Titanium/Superalloy/Carbon Fiber	●								✖			●

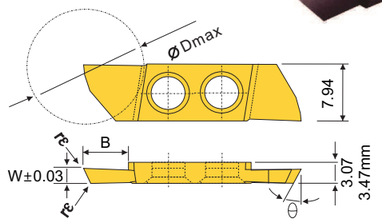
Application	Dimension and Shape	Specification	W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
Cut-off	 With Groove	CTPA 07FR	0.7	4.5	0.05	16°				●	●	●			●			
		10FR	1.0	6.7						●	●	●			●			
		15FR	1.5	9.2						●	●	●			●			
		20FR	2.0	9.2						●	●	●			●			
		25FR	2.5	9.2						●	●	●			●			
		30FR	3.0	9.2						●	●	●			●			
Cut-off/Grooving	 With Groove	CTPA 07FRN	0.7	4.5	0.05	0°				●	●	●			●			
		10FRN	1.0	6.7						●	●	●			●			
		15FRN	1.5	9.2						●	●	●			●			
		20FRN	2.0	9.2						●	●	●			●			
		25FRN	2.5	9.2						●	●	●			●			
		30FRN	3.0	9.2						●	●	●			●			
Cut-off	 With Groove Applicable to models with auxiliary chuck installed	CTPA 07FRK	0.7	4.5	0.05	16°				●	●	●			●			
		10FRK	1.0	6.7						●	●	●			●			
		15FRK	1.5	9.2						●	●	●			●			
		20FRK	2.0	9.2						●	●	●			●			
Cut-off	 With Groove	CTPA 07FL	0.7	4.5	0.05	16°				●	●	●			●			
		10FL	1.0	6.7						●	●	●			●			
		15FL	1.5	9.2						●	●	●			●			
		20FL	2.0	9.2						●	●	●			●			
		25FL	2.5	9.2						●	●	●			●			
		30FL	3.0	9.2						●	●	●			●			
Cut-off/Grooving	 With Groove	CTPA 07FLN	0.7	4.5	0.05	0°				●	●	●			●			
		10FLN	1.0	6.7						●	●	●			●			
		15FLN	1.5	9.2						●	●	●			●			
		20FLN	2.0	9.2						●	●	●			●			
		25FLN	2.5	9.2						●	●	●			●			
		30FLN	3.0	9.2						●	●	●			●			
Cut-off	 With Groove Applicable to models with auxiliary chuck installed	CTPA 07FLK	0.7	4.5	0.05	16°				●	●	●			●			
		10FLK	1.0	6.7						●	●	●			●			
		15FLK	1.5	9.2						●	●	●			●			
		20FLK	2.0	9.2						●	●	●			●			

Application	Dimension and Shape	Specification	W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
Cut-off	 Without Groove	CTPA 10FRV	1.0	6.7	0.0	20°	●			●	●	●			●			
		15FRV	1.5	9.5			●			●	●	●			●			
		20FRV	2.0	9.5			●			●	●	●			●			
Cut-off/Grooving	 Without Groove	CTPA 15FRNV	1.5	9.5	0.0	0°	●			●	●	●			●			
		20FRNV	2.0				●			●	●	●			●			
Cut-off	 Without Groove	CTPA 10FLV	1.0	6.7	0.0	20°	●			●	●	●			●			
		15FLV	1.5	9.5			●			●	●	●			●			
		20FLV	2.0	9.5			●			●	●	●			●			
Cut-off/Grooving	 Without Groove	CTPA 15FLNV	1.5	9.5	0.0	0°	●			●	●	●			●			
		20FLNV	2.0				●			●	●	●			●			
Cut-off	 Without Groove Applicable to models with auxiliary chuck installed	CTPA 15FLKV	1.5	9.5	0.0	20°	●			●	●	●			●			

AB10

☆θ Installation Angle For The Toolholder

CTPW



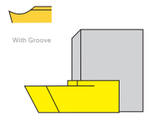
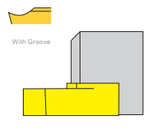
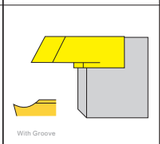
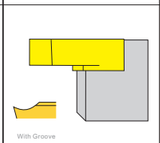
ØDmax=Ø10~23mm

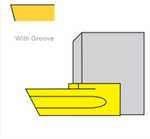
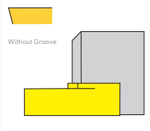
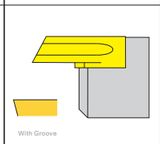
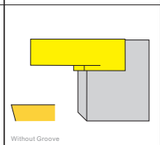
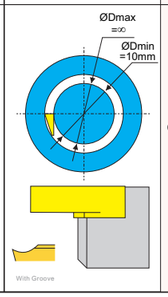
(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

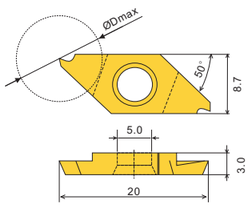
		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
P	Steel	●		◐	◐		◐	●	◐	✖	◐	◐	◐
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔	◔
K	Iron	●		◐		◐		✖	◐	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	◔	◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●								✖			●
H	Titanium/Superalloy/Carbon Fiber	●								✖			●

Application	Dimension and Shape	Specification	W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
Cut-off	 With Groove	CTPW10FR	1.0	5.0	0.06	15°				●	●	●			●			
		15FR	1.5	8.5	0.06					●	●	●			●			
		20FR	2.0	11.5	0.1					●	●	●			●			
		25FR	2.5	11.5	0.1					●	●	●			●			
		30FR	3.0	11.5	0.2					●	●	●			●			
		34FR	3.4	11.5	0.2					●	●	●			●			
Cut-off/Grooving	 With Groove	CTPW10FRN	1.0	5.0	0.06	0°				●	●	●			●			
		15FRN	1.5	8.5	0.06					●	●	●			●			
		20FRN	2.0	11.5	0.1					●	●	●			●			
		25FRN	2.5	11.5	0.1					●	●	●			●			
		30FRN	3.0	11.5	0.2					●	●	●			●			
		34FRN	3.4	11.5	0.2					●	●	●			●			
Cut-off	 With Groove	CTPW10FL	1.0	5.0	0.06	15°				●	●	●			●			
		15FL	1.5	8.5	0.06					●	●	●			●			
		20FL	2.0	11.5	0.1					●	●	●			●			
		25FL	2.5	11.5	0.1					●	●	●			●			
		30FL	3.0	11.5	0.2					●	●	●			●			
		34FL	3.4	11.5	0.2					●	●	●			●			
Cut-off/Grooving	 With Groove	CTPW10FLN	1.0	5.0	0.06	0°				●	●	●			●			
		15FLN	1.5	8.5	0.06					●	●	●			●			
		20FLN	2.0	11.5	0.1					●	●	●			●			
		25FLN	2.5	11.5	0.1					●	●	●			●			
		30FLN	3.0	11.5	0.2					●	●	●			●			
		34FLN	3.4	11.5	0.2					●	●	●			●			

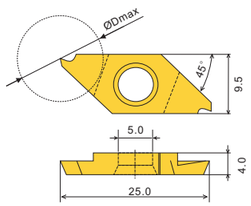
Application	Dimension and Shape	Specification	W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK30	PMS31
Cut-off	 With Groove	CTPW10FRU	1.0	5.0	0.06	15°				●	●	●			●			
		15FRU	1.5	8.5	0.06					●	●	●			●			
		20FRU	2.0	11.5	0.1					●	●	●			●			
		25FRU	2.5	11.5	0.1					●	●	●			●			
		30FRU	3.0	11.5	0.2					●	●	●			●			
		34FRU	3.4	11.5	0.2					●	●	●			●			
Cut-off/Grooving	 Without Groove	CTPW10FRNV	1.0	5.0	0.06	0°				●	●	●			●			
		15FRNV	1.5	8.5	0.06					●	●	●			●			
		20FRNV	2.0	11.5	0.1					●	●	●			●			
		25FRNV	2.5	11.5	0.1					●	●	●			●			
		30FRNV	3.0	11.5	0.2					●	●	●			●			
		34FRNV	3.4	11.5	0.2					●	●	●			●			
Cut-off	 With Groove	CTPW10FLU	1.0	5.0	0.06	15°				●	●	●			●			
		15FLU	1.5	8.5	0.06					●	●	●			●			
		20FLU	2.0	11.5	0.1					●	●	●			●			
		25FLU	2.5	11.5	0.1					●	●	●			●			
		30FLU	3.0	11.5	0.2					●	●	●			●			
		34FLU	3.4	11.5	0.2					●	●	●			●			
Cut-off/Grooving	 Without Groove	CTPW10FLNV	1.0	5.0	0.06	0°				●	●	●			●			
		15FLNV	1.5	8.5	0.06					●	●	●			●			
		20FLNV	2.0	11.5	0.1					●	●	●			●			
		25FLNV	2.5	11.5	0.1					●	●	●			●			
		30FLNV	3.0	11.5	0.2					●	●	●			●			
		34FLNV	3.4	11.5	0.2					●	●	●			●			
End Face Grooving	 With Groove	CTPW20FLN-D	2.0	9.0	0.06	0°				●	●	●			●			
		25FLN-D	2.5	11.5	0.10					●	●	●			●			
		30FLN-D	3.0	11.5	0.15					●	●	●			●			
		34FLN-D	3.4	11.5	0.15					●	●	●			●			

☆θ Installation Angle For The Toolholder

TKF



TKF12..
ØDmax=Ø5~12mm



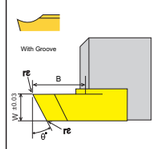
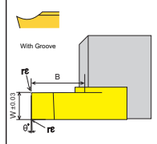
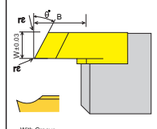
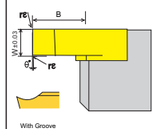
TKF16..
ØDmax=Ø5~16mm

(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

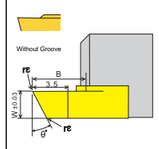
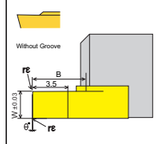
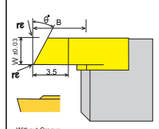
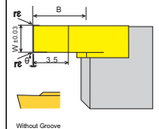
Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	ZM860
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	W±0.03	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	ZM860
Cut-off	 With Groove	TKF12R 050-S16R	0.5	2.8	0.03	16°				●	●	●			●		
		070-S16R	0.7	4.5						●	●	●			●		
		100-S16R	1.0	6.5						●	●	●			●		
		125-S16R	1.25	6.5						●	●	●			●		
		150-S16R	1.5	6.5						●	●	●			●		
		200-S16R	2.0	6.5						●	●	●			●		
		TKF16R 100-S16R	1.0	8.5	0.05	16°				●	●	●			●		
		125-S16R	1.25							●	●	●			●		
		150-S16R	1.5							●	●	●			●		
		200-S16R	2.0							●	●	●			●		
		250-S16R	2.5							●	●	●			●		
		300-S16R	3.0							●	●	●			●		
Cut-off/Grooving	 With Groove	TKF12R 050-T32	0.5	2.8	0.03	0°				●	●	●			●		
		070-T32	0.7	4.5						●	●	●			●		
		100-T32	1.0	6.5						●	●	●			●		
		125-T32	1.25	6.5						●	●	●			●		
		150-T32	1.5	6.5						●	●	●			●		
		200-T32	2.0	6.5						●	●	●			●		
		TKF16R 100-T32	1.0	8.5	0.05	0°				●	●	●			●		
		125-T32	1.25							●	●	●			●		
		150-T32	1.5							●	●	●			●		
		200-T32	2.0							●	●	●			●		
		250-T32	2.5							●	●	●			●		
		300-T32	3.0							●	●	●			●		
Cut-off	 With Groove	TKF12L 050-S16R	0.5	2.8	0.03	16°				●	●	●			●		
		070-S16R	0.7	4.5						●	●	●			●		
		100-S16R	1.0	6.5						●	●	●			●		
		125-S16R	1.25	6.5						●	●	●			●		
		150-S16R	1.5	6.5						●	●	●			●		
		200-S16R	2.0	6.5						●	●	●			●		
		TKF16L 100-S16R	1.0	8.5	0.05	16°				●	●	●			●		
		125-S16R	1.25							●	●	●			●		
		150-S16R	1.5							●	●	●			●		
		200-S16R	2.0							●	●	●			●		
		250-S16R	2.5							●	●	●			●		
		300-S16R	3.0							●	●	●			●		
Cut-off/Grooving	 With Groove	TKF12L 050-T32	0.5	2.8	0.03	0°				●	●	●			●		
		070-T32	0.7	4.5						●	●	●			●		
		100-T32	1.0	6.5						●	●	●			●		
		125-T32	1.25	6.5						●	●	●			●		
		150-T32	1.5	6.5						●	●	●			●		
		200-T32	2.0	6.5						●	●	●			●		
		TKF16L 100-T32	1.0	8.5	0.05	0°				●	●	●			●		
		125-T32	1.25							●	●	●			●		
		150-T32	1.5							●	●	●			●		
		200-T32	2.0							●	●	●			●		
		250-T32	2.5							●	●	●			●		
		300-T32	3.0							●	●	●			●		

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
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	W±0.05	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Cut-off	 Without Groove	TKF12R 050N-S16R	0.5	2.8	0.03	20°				●	●	●			●		
		070N-S16R	0.7	4.5						●	●	●			●		
		100N-S16R	1.0	6.5						●	●	●			●		
		125N-S16R	1.25	6.5						●	●	●			●		
		150N-S16R	1.5	6.5						●	●	●			●		
		200N-S16R	2.0	6.5						●	●	●			●		
		TKF16R 100N-S16R	1.0	8.5	0.05	20°				●	●	●			●		
		125N-S16R	1.25							●	●	●			●		
		150N-S16R	1.5							●	●	●			●		
		200N-S16R	2.0							●	●	●			●		
		250N-S16R	2.5							●	●	●			●		
		300N-S16R	3.0							●	●	●			●		
Cut-off/Grooving	 Without Groove	TKF12R 050N-T32	0.5	2.8	0.03	0°				●	●	●			●		
		070N-T32	0.7	4.5						●	●	●			●		
		100N-T32	1.0	6.5						●	●	●			●		
		125N-T32	1.25	6.5						●	●	●			●		
		150N-T32	1.5	6.5						●	●	●			●		
		200N-T32	2.0	6.5						●	●	●			●		
		TKF16R 100N-T32	1.0	8.5	0.05	0°				●	●	●			●		
		125N-T32	1.25							●	●	●			●		
		150N-T32	1.5							●	●	●			●		
		200N-T32	2.0							●	●	●			●		
		250N-T32	2.5							●	●	●			●		
		300N-T32	3.0							●	●	●			●		
Cut-off	 Without Groove	TKF12L 050N-S16R	0.5	2.8	0.03	20°				●	●	●			●		
		070N-S16R	0.7	4.5						●	●	●			●		
		100N-S16R	1.0	6.5						●	●	●			●		
		125N-S16R	1.25	6.5						●	●	●			●		
		150N-S16R	1.5	6.5						●	●	●			●		
		200N-S16R	2.0	6.5						●	●	●			●		
		TKF16L 100N-S16R	1.0	8.5	0.05	20°				●	●	●			●		
		125N-S16R	1.25							●	●	●			●		
		150N-S16R	1.5							●	●	●			●		
		200N-S16R	2.0							●	●	●			●		
		250N-S16R	2.5							●	●	●			●		
		300N-S16R	3.0							●	●	●			●		
Cut-off/Grooving	 Without Groove	TKF12L 050N-T32	0.5	2.8	0.03	0°				●	●	●			●		
		070N-T32	0.7	4.5						●	●	●			●		
		100N-T32	1.0	6.5						●	●	●			●		
		125N-T32	1.25	6.5						●	●	●			●		
		150N-T32	1.5	6.5						●	●	●			●		
		200N-T32	2.0	6.5						●	●	●			●		
		TKF16L 100N-T32	1.0	8.5	0.05	0°				●	●	●			●		
		125N-T32	1.25							●	●	●			●		
		150N-T32	1.5							●	●	●			●		
		200N-T32	2.0							●	●	●			●		
		250N-T32	2.5							●	●	●			●		
		300N-T32	3.0							●	●	●			●		

☆θ Installation Angle For The Toolholder

End Face Grooving
Cut-off/ Grooving Processing

MG

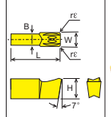
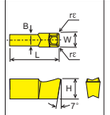
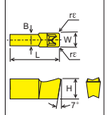
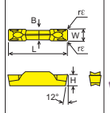
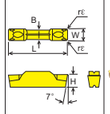
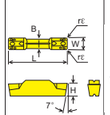
(Cutting Speed): m/min

(mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

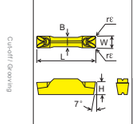
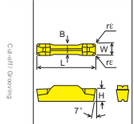
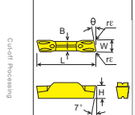
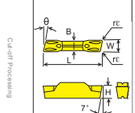
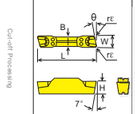
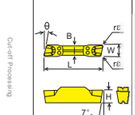
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
End Face Grooving			FGD 300R-03	3.0	0.3	15.0	2.0	4.0	-				•					
			400R-04	4.0	0.4	15.0	3.0	4.5	-				•					
			500R-04	5.0	0.4	15.0	4.0	5.0	-				•					
End Face Grooving			FGM 300R-03	3.0	0.3	15.0	2.0	4.0	-					•				
			400R-04	4.0	0.4	15.0	3.0	4.5	-									
			500R-04	5.0	0.4	15.0	4.0	5.0	-									
End Face Grooving			FMM 300R-03	3.0	0.3	15.0	2.0	3.91	-				•					
			400R-04	4.0	0.4	15.0	3.0	3.96	-				•					
			500R-04	5.0	0.4	15.0	4.0	4.42	-				•					
End Face Grooving			MFMN 300	3.0	0.2	18.0	2.0	3.0	-					•				
Cut-off/ Grooving			MGMN 150-G11	1.5	0.15	16.0	1.2	3.5	-		•	•	•	•	•	•	•	•
			200-G11	2.0	0.2	16.0	1.6	3.5	-		•	•	•	•	•	•	•	•
			250-G11	2.5	0.2	18.5	2.0	3.85	-		•	•	•	•	•	•	•	•
			300-G11	3.0	0.4	21.0	2.35	4.8	-									
			400-G11	4.0	0.4	21.0	3.3	4.8	-									
			500-G11	5.0	0.8	26.0	4.1	5.8	-									
			600-G11	6.0	0.8	26.0	5.0	5.8	-									
Cut-off/ Grooving			MGMN 200-G12	2.0	0.2	16.0	1.2	3.5	-		•	•	•	•	•	•	•	•
			250-G12	2.5	0.2	18.5	2.0	3.85	-		•	•	•	•	•	•	•	•
			300-02-G12	3.0	0.2	21.0	2.35	4.8	-		•	•	•	•	•	•	•	•
			300-G12	3.0	0.4	21.0	2.35	4.8	-		•	•	•	•	•	•	•	•
			350-03-G12	3.5	0.3	21.0	2.9	4.8	-									
			400-02-G12	4.0	0.2	21.0	3.3	4.8	-		•	•	•	•	•	•	•	•
			400-G12	4.0	0.4	21.0	3.3	4.8	-		•	•	•	•	•	•	•	•
			500-04-G12	5.0	0.4	26.0	4.1	5.8	-		•	•	•	•	•	•	•	•
			500-G12	5.0	0.8	26.0	4.1	5.8	-		•	•	•	•	•	•	•	•
			600-G12	6.0	0.8	26.0	5.0	5.8	-		•	•	•	•	•	•	•	•
			800-G12	8.0	0.8	31.0	6.0	6.5	-		•	•	•	•	•	•	•	•

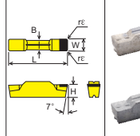
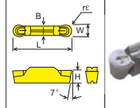
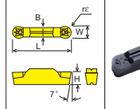
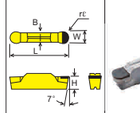
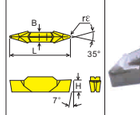
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			MGMN 200-G14	2.0	0.2	16.0	1.6	3.5	-				•	•	•	•	•	•
			250-G14	2.5	0.2	18.5	2.0	3.85	-				•	•	•	•	•	•
			300-G14	3.0	0.4	21.0	2.35	4.8	-				•	•	•	•	•	•
			400-G14	4.0	0.4	21.0	3.3	4.8	-				•	•	•	•	•	•
			500-G14	5.0	0.8	26.0	4.1	5.8	-				•	•	•	•	•	•
			600-G14	6.0	0.8	26.0	5.0	5.8	-				•	•	•	•	•	•
Cut-off/ Grooving			MGMN 200-T41	2.0	0.2	16	1.6	3.5	-				•	•	•	•	•	•
			300-T41	3.0	0.2	21	2.35	4.8	-				•	•	•	•	•	•
			400-T41	4.0	0.2	21	3.3	4.8	-				•	•	•	•	•	•
			500-T41	5.0	0.4	26	4.1	5.8	-				•	•	•	•	•	•
Cut-off/ Processing			MGMR 300-6D-G10	3.0	0.2	21.0	2.35	4.8	6.0									
			300-8D-G10	3.0	0.2	21.0	2.35	4.8	8.0									
			300-15D-G10	3.0	0.2	21.0	2.35	4.8	15.0									
			400-4D-G10	4.0	0.3	21.0	3.3	4.8	4.0									
			500-4D-G10	5.0	0.3	26.0	4.1	5.8	4.0									
Cut-off/ Processing			MGML 300-6D-G10	3.0	0.2	21.0	2.35	4.8	6.0									
			300-8D-G10	3.0	0.2	21.0	2.35	4.8	8.0									
			300-15D-G10	3.0	0.2	21.0	2.35	4.8	15.0									
			400-4D-G10	4.0	0.3	21.0	3.3	4.8	4.0									
			500-4D-G10	5.0	0.3	26.0	4.1	5.8	4.0									
Cut-off/ Processing			MGMN 200R-6	2.0	0.2	16.0	1.6	3.6	6.0				•	•	•	•	•	•
			300R-6	3.0	0.2	21.0	2.35	4.8	6.0									
			300R-8	3.0	0.2	21.0	2.35	4.8	8.0				•	•	•	•	•	•
			300R-15	3.0	0.2	21.0	2.35	4.8	15.0									
			400R-4	4.0	0.3	21.0	3.3	4.8	4.0				•	•	•	•	•	•
			500R-4	5.0	0.3	26.0	4.1	5.8	4.0				•	•	•	•	•	•
Cut-off/ Processing			MGMN 200L-6	2.0	0.2	16.0	1.6	3.6	6.0				•	•	•	•	•	•
			300L-6	3.0	0.2	21.0	2.35	4.8	6.0									
			300L-8	3.0	0.2	21.0	2.35	4.8	8.0				•	•	•	•	•	•
			300L-15	3.0	0.2	21.0	2.35	4.8	15.0									
			400L-4	4.0	0.3	21.0	3.3	4.8	4.0				•	•	•	•	•	•
			500L-4	5.0	0.3	26.0	4.1	5.8	4.0				•	•	•	•	•	•

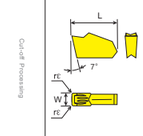
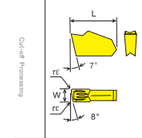
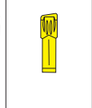
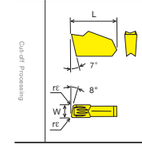
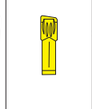
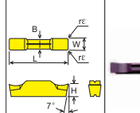
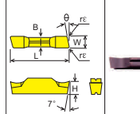
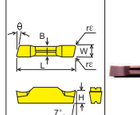
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			MGMN 150	1.5	0.15	16.0	1.6	3.5	-	•	•	•	•	•	•	•	•	•
			200	2.0	0.2	16.0	1.6	3.5	-	•	•	•	•	•	•	•	•	•
			250	2.5	0.2	18.5	2.0	3.85	-	•	•	•	•	•	•	•	•	•
			300-02	3.0	0.2	21.0	2.35	4.8	-	•	•	•	•	•	•	•	•	•
			300	3.0	0.4	21.0	2.35	4.8	-	•	•	•	•	•	•	•	•	•
			350-03	3.5	0.3	21.0	2.35	4.8	-	•	•	•	•	•	•	•	•	•
			400-02	4.0	0.2	21.0	3.3	4.8	-	•	•	•	•	•	•	•	•	•
			400	4.0	0.4	21.0	3.3	4.8	-	•	•	•	•	•	•	•	•	•
			500-04	5.0	0.4	26.0	4.1	5.8	-	•	•	•	•	•	•	•	•	•
			500	5.0	0.8	26.0	4.1	5.8	-	•	•	•	•	•	•	•	•	•
			600	6.0	0.8	26.0	5.0	5.8	-	•	•	•	•	•	•	•	•	•
			700	7.0	0.8	26.0	5.0	5.8	-	•	•	•	•	•	•	•	•	•
			800	8.0	0.8	31.0	6.0	6.5	-	•	•	•	•	•	•	•	•	•
Aluminum Alloy Wheel Processing			MRGN 400-G15	4.0	2.0	21.0	3.3	4.8	-				•					
			500-G15	5.0	2.5	26.0	4.1	5.8	-				•					
			600-G15	6.0	3.0	26.0	5.0	5.8	-				•					
			800-G15	8.0	4.0	31.0	6.0	6.5	-				•					
Grooving			MRMN 200-G12	2.0	1.0	16.0	1.5	3.5	-						•	•	•	•
			300-G12	3.0	1.5	21.0	2.35	4.8	-						•	•	•	•
			400-G12	4.0	2.0	21.0	3.3	4.8	-						•	•	•	•
			500-G12	5.0	2.5	26.0	4.1	5.8	-						•	•	•	•
			600-G12	6.0	3.0	26.0	5.0	5.8	-						•	•	•	•
			800-G12	8.0	4.0	31.0	6.0	6.5	-						•	•	•	•
Grooving			MRMN 150	1.5	0.75	16.0	1.2	3.5	-	•	•	•	•	•	•	•	•	•
			200	2.0	1.0	16.0	1.6	3.5	-	•	•	•	•	•	•	•	•	•
			250	2.5	1.25	18.5	2.0	3.85	-	•	•	•	•	•	•	•	•	•
			300	3.0	1.5	21.0	2.35	4.8	-	•	•	•	•	•	•	•	•	•
			350	3.5	1.75	21.0	2.35	4.8	-	•	•	•	•	•	•	•	•	•
			400	4.0	2.0	21.0	3.3	4.8	-	•	•	•	•	•	•	•	•	•
			500	5.0	2.5	26.0	4.1	5.8	-	•	•	•	•	•	•	•	•	•
			600	6.0	3.0	26.0	5.0	5.8	-	•	•	•	•	•	•	•	•	•
			700	7.0	3.5	26.0	5.0	5.8	-	•	•	•	•	•	•	•	•	•
			800	8.0	4.0	31.0	6.0	6.5	-	•	•	•	•	•	•	•	•	•
Aluminum Alloy Wheel Processing			MVGN 8N-A-R1.2	-	1.2	30.0	6.0	6.9	-				•					
			8N-A-R1.6	-	1.6	30.0	6.0	6.9	-				•					

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	Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off Processing			SP 200	2.2	0.2	9.3	-	-	-				•	•	•	•	•	•
			300	3.1	0.2	11.3	-	-	-				•	•	•	•	•	•
			400	4.1	0.25	11.3	-	-	-				•	•	•	•	•	•
			500	5.1	0.3	11.4	-	-	-				•	•	•	•	•	•
			600	6.4	0.35	11.4	-	-	-				•	•	•	•	•	•
Cut-off Processing			SP 200R	2.2	0.2	9.3	-	-	-				•	•	•	•	•	•
			300R	3.1	0.2	11.3	-	-	-				•	•	•	•	•	•
			400R	4.1	0.25	11.3	-	-	-				•	•	•	•	•	•
			500R	5.1	0.3	11.4	-	-	-				•	•	•	•	•	•
			600R	6.4	0.35	11.4	-	-	-				•	•	•	•	•	•
Cut-off Processing			SP 200L	2.2	0.2	9.3	-	-	-				•	•	•	•	•	•
			300L	3.1	0.2	11.3	-	-	-				•	•	•	•	•	•
			400L	4.1	0.25	11.3	-	-	-				•	•	•	•	•	•
			500L	5.1	0.3	11.4	-	-	-				•	•	•	•	•	•
			600L	6.4	0.35	11.4	-	-	-				•	•	•	•	•	•
Cut-off/ Grooving			MGGN 150	1.5	0.15	16.0	1.2	3.5	-		•	•			•			•
			200	2.0	0.2	16.0	1.6	3.5	-		•	•			•			•
			250	2.5	0.2	18.5	2.0	3.85	-		•	•			•			•
			300	3.0	0.4	21.0	2.35	4.8	-		•	•			•			•
			400	4.0	0.4	21.0	3.3	4.8	-		•	•			•			•
			500	5.0	0.8	26.0	4.1	5.8	-		•	•			•			•
			600	6.0	0.8	26.0	5.0	5.8	-		•	•			•			•
Cut-off Processing			MGGN 150R-8	1.5	0.15	16.0	1.2	3.5	8°		•	•			•			•
			200R-8	2.0	0.2	16.0	1.6	3.5	8°		•	•			•			•
			250R-8	2.5	0.2	18.5	2.0	3.85	8°		•	•			•			•
			300R-8	3.0	0.4	21.0	2.35	4.8	8°		•	•			•			•
			400R-8	4.0	0.4	21.0	3.3	4.8	8°		•	•			•			•
			500R-8	5.0	0.8	26.0	4.1	5.8	8°		•	•			•			•
			600R-8	6.0	0.8	26.0	5.0	5.8	8°		•	•			•			•
Cut-off Processing			MGGN 150L-8	1.5	0.15	16.0	1.2	3.5	8°		•	•			•			•
			200L-8	2.0	0.2	16.0	1.6	3.5	8°		•	•			•			•
			250L-8	2.5	0.2	18.5	2.0	3.85	8°		•	•			•			•
			300L-8	3.0	0.4	21.0	2.35	4.8	8°		•	•			•			•
			400L-8	4.0	0.4	21.0	3.3	4.8	8°		•	•			•			•
			500L-8	5.0	0.8	26.0	4.1	5.8	8°		•	•			•			•
			600L-8	6.0	0.8	26.0	5.0	5.8	8°		•	•			•			•

A4.

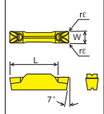
(Cutting Speed): m/min^{-1} (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

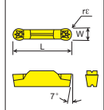
Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		A4G 0205M02U02-G27	2.05	0.2	20						•		•	•
		0255M2BU02-G27	2.62	0.2	20						•		•	•
		0305M03U02-G27	3.05	0.2	20						•		•	•
		0305M03U04-G27	3.05	0.4	20						•		•	•
		0405M04U04-G27	4.05	0.4	20						•		•	•
		0405M04U08-G27	4.05	0.8	20						•		•	•
		0505M05U04-G27	5.05	0.4	25						•		•	•
		0505M05U08-G27	5.05	0.8	25						•		•	•
		0605M06U04-G27	6.05	0.4	30						•		•	•
		0605M06U08-G27	6.05	0.8	30						•		•	•
		0605M06U12-G27	6.05	1.2	30						•		•	•
		0805M08U08-G27	8.05	0.8	30						•		•	•
		0805M08U12-G27	8.05	1.2	30						•		•	•
		1005M10U08-G27	10.0	0.5	30						•		•	•
		1005M10U12-G27	10.0	1.2	30						•		•	•

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

Grooving

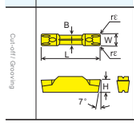
Dimensioning	Product Image	Specification	W	rε	L	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		A4R 0205M02U00-G27	2.05	1.1	20					•	•	•	•	•
		0305M03U00-G27	3.05	1.5	20					•	•	•	•	•
		0405M04U00-G27	4.05	2.0	20					•	•	•	•	•
		0505M05U00-G27	5.05	2.5	25					•	•	•	•	•
		0605M06U00-G27	6.05	3.0	30					•	•	•	•	•
		0805M08U00-G27	8.05	4.0	30					•	•	•	•	•
		1005M10U00-G27	10.0	5.0	30					•	•	•	•	•

GC

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

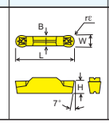
Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		GCMN3004-G16	3.0	0.4	21.1	-	3.8	-						•		•	•
		4008-G16	4.0	0.8	26.4	-	4.0	-						•		•	•
		5008-G16	5.0	0.8	26.4	-	4.1	-						•		•	•
		6008-G16	6.0	0.8	26.4	-	4.5	-						•		•	•
		7008-G16	7.0	0.8	28.7	-	5.5	-						•		•	•
		8008-G16	8.0	0.8	28.7	-	6.0	-						•		•	•

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

Grooving

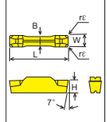
Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		GCMN 3015-G17	3.0	1.5	21.1	-	3.8	-						•		•	•
		4020-G17	4.0	2.0	26.4	-	4.0	-						•		•	•
		5025-G17	5.0	2.5	27.2	-	4.1	-						•		•	•
		6030-G17	6.0	3.0	27.5	-	4.5	-						•		•	•
		7035-G17	7.0	3.5	29.0	-	5.5	-						•		•	•
		8040-G17	8.0	4.0	29.0	-	6.0	-						•		•	•

GM

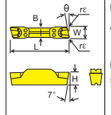
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

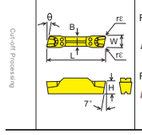
Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		GMM1520-T21	1.5	0.0	20	1.2	4.3	-				•				•	
		2020-T21	2.0	0.0	20	1.5	4.3	-				•				•	
		2520-T21	2.5	0.0	20	1.9	4.3	-				•				•	
		3020-T21	3.0	0.0	20	2.3	4.3	-				•				•	

Cut-off Processing

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
	R-MT	GMM 1520R-T21-15D	1.5	0.0	20	1.2	4.3	15°				•				•	
		2020R-T21-15D	2.0	0.0	20	1.5	4.3	15°				•				•	
		2520R-T21-15D	2.5	0.0	20	1.9	4.3	15°				•				•	
		3020R-T21-15D	3.0	0.0	20	2.3	4.3	15°				•				•	
	R-TK	2020R-G28-8D	2.0	0.2	20	1.5	4.3	8°				•				•	
		2520R-G28-8D	2.5	0.2	20	1.9	4.3	8°				•				•	
		3020R-G28-8D	3.0	0.25	20	2.3	4.3	8°				•				•	

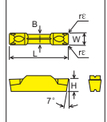
Cut-off Processing

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
	R-MT	GMM 1520L-T21-15D	1.5	0.0	20	1.2	4.3	15°				•				•	
		2020L-T21-15D	2.0	0.0	20	1.5	4.3	15°				•				•	
		2520L-T21-15D	2.5	0.0	20	1.9	4.3	15°				•				•	
		3020L-T21-15D	3.0	0.0	20	2.3	4.3	15°				•				•	
	R-TK	2020L-G28-8D	2.0	0.2	20	1.5	4.3	8°									
		2520L-G28-8D	2.5	0.2	20	1.9	4.3	8°									
		3020L-G28-8D	3.0	0.25	20	2.3	4.3	8°									

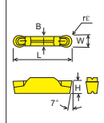
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		GMM3020-020-G26	3.0	0.2	20	2.3	4.3	-				•	•	•		•	
		3020-040-G26	3.0	0.4	20	2.3	4.3	-				•	•	•		•	
		4020-020-G26	4.0	0.2	20	3.3	4.3	-				•	•	•		•	
		4020-040-G26	4.0	0.4	20	3.3	4.3	-				•	•	•		•	
		4020-080-G26	4.0	0.8	20	3.3	4.3	-				•	•	•		•	
		5020-040-G26	5.0	0.4	20	4.2	4.3	-				•	•	•		•	
		5020-080-G26	5.0	0.8	20	4.2	4.3	-				•	•	•		•	
		6020-040-G26	6.0	0.4	20	5.2	4.3					•	•	•		•	
		6020-080-G26	6.0	0.8	20	5.2	4.3					•	•	•		•	
		8030-080-G26	8.0	0.8	30	6.0	5.5					•	•	•		•	

Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		GMM 3020-150R	3.0	1.5	20	2.3	4.3	-				•	•	•		•	
		4020-200R	4.0	2.0	20	3.3	4.3	-				•	•	•		•	
		5020-250R	5.0	2.5	20	4.2	4.3	-				•	•	•		•	
		6020-300R	6.0	3.0	20	5.2	4.3	-				•	•	•		•	

DG

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

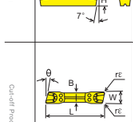
Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		DGN 2002C	2.0	0.2	19.9	-	-	-				•		•		•	
		2502C	2.5	0.2	20.7	-	-	-				•		•		•	
		3102C	3.1	0.2	20.1	-	-	-				•		•		•	
		4003C	4.0	0.3	18.8	-	-	-				•		•		•	
		5003C	5.0	0.3	19.1	-	-	-				•		•		•	
		DGN 2002J	2.0	0.2	19.9	-	-	-				•		•		•	
		3102J	3.1	0.2	20.1	-	-	-				•		•		•	
		4003J	4.0	0.3	18.8	-	-	-				•		•		•	
		5003J	5.0	0.3	19.1	-	-	-				•		•		•	

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Application		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	●		✕ ●

Cut-off/ Grooving

Dimensioning	Product Image	Specification	W	rε	L	B	H	θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		PENTA24N 050P005	0.50	0.05	2.0	-	-	-								•	
		075P005	0.75	0.05	3.0	-	-	-								•	
		100P005	1.00	0.05	4.0	-	-	-								•	
		120P005	1.20	0.05	4.0	-	-	-								•	
		150P005	1.50	0.05	4.0	-	-	-								•	
		185P005	1.85	0.05	4.0	-	-	-								•	
		200P005	2.00	0.05	4.0	-	-	-								•	
		230P005	2.30	0.05	4.5	-	-	-								•	
		250P005	2.50	0.05	4.5	-	-	-								•	
		270P005	2.70	0.05	4.5	-	-	-								•	
		300P005	3.00	0.05	4.5	-	-	-								•	
 Grinding groove (finishing)																	
With chip breaker (roughing)		PENTA24N 050J	0.5	0.05	2.0	-	-	-								•	
		100J	1.0	0.10	2.5	-	-	-								•	
		150J	1.5	0.10	6.0	-	-	-								•	
		200J	2.0	0.10	6.0	-	-	-								•	
		250J	2.5	0.20	6.0	-	-	-								•	
		300J	3.0	0.20	6.0	-	-	-								•	

End Face Grooving
Cut-off/ Grooving Processing

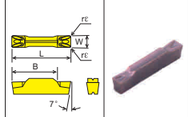
GY

(Cutting Speed): m/min^{-1} (mm)

Application	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

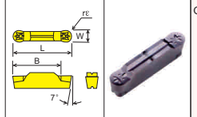
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			GY2M 0200D020N-T20	2.0	0.2	20.7	19.1					●		●	●	●
			0250E020N-T20	2.5	0.2	20.7	19.1					●		●	●	●
			0300F020N-T20	3.0	0.2	20.7	19.1					●		●	●	●
			0300F040N-T20	3.0	0.4	20.7	18.9					●		●	●	●
			0300F080N-T20	3.0	0.8	20.7	18.5					●		●	●	●
			0400G020N-T20	4.0	0.2	25.6	24.1					●		●	●	●
			0400G040N-T20	4.0	0.4	25.6	23.9					●		●	●	●
			0400G080N-T20	4.0	0.8	25.6	23.5					●		●	●	●
			0500H040N-T20	5.0	0.4	25.6	23.9					●		●	●	●
			0500H080N-T20	5.0	0.8	25.6	23.5					●		●	●	●
			0600J040N-T20	6.0	0.4	25.6	23.9					●		●	●	●
			0600J080N-T20	6.0	0.8	25.6	23.5					●		●	●	●
			0800K080N-T20	8.0	0.8	30.5	28.5					●		●	●	●
			0800K120N-T20	8.0	1.2	30.5	28.1					●		●	●	●

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

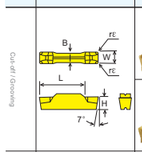
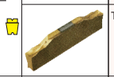
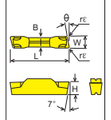
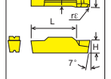
P	Steel																						
M	Stainless Steel																						
K	Iron																						
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood																						
S	Carbide/Powder Metallurgy																						
H	Titanium/Superalloy/Carbon Fiber																						

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			GY2M 0200D100N-G19	2.0	1.0	20.9	19.5							●	●	●
			0250E125N-G19	2.5	1.25	20.9	19.3							●	●	●
			0300F150N-G19	3.0	1.5	20.9	19.0							●	●	●
			0318F159N-G19	3.18	1.59	20.9	18.9							●	●	●
			0400G200N-G19	4.0	2.0	25.8	23.4							●	●	●
			0475H238N-G19	4.75	2.38	25.8	22.9							●	●	●
			0500H250N-G19	5.0	2.5	25.8	22.8							●	●	●
			0600J300N-G19	6.0	3.0	25.9	22.5							●	●	●
			0635J318N-G19	6.35	3.18	25.9	22.3							●	●	●
			0800K400N-G19	8.0	4.0	30.8	26.5							●	●	●

TD

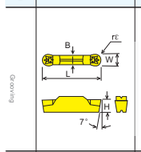
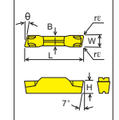
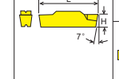
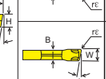
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			TDC 2	2.0	0.2	20.0	1.7	4.7	-				●	●	●	●	●	●
			3	3.0	0.2	20.0	2.4	4.7	-				●	●	●	●	●	●
			4	4.0	0.3	20.0	3.0	4.7	-				●	●	●	●	●	●
			5	5.0	0.3	25.0	4.0	5.2	-				●	●	●	●	●	●
			6	6.0	0.3	25.0	5.0	5.2	-				●	●	●	●	●	●
			8	8.0	0.4	30.0	6.0	6.4	-				●	●	●	●	●	●
			TDJ 1.4	1.4	0.16	16.0	1.0	4.0	-				●		●	●	●	●
			2	2.0	0.2	20.0	1.7	4.7	-				●		●	●	●	●
			3	3.0	0.2	20.0	2.4	4.7	-				●		●	●	●	●
			4	4.0	0.3	20.0	3.0	4.7	-				●		●	●	●	●
			5	5.0	0.3	25.0	4.0	5.2	-				●		●	●	●	●
			6	6.0	0.3	25.0	5.0	5.2	-				●		●	●	●	●
Cut-off/ Processing			TDC 2-6R	2	0.2	20.0	1.7	4.7	6°							●		
			2-8R	2	0.2	20.0	1.7	4.7	8°							●		
			2-15R	2	0.2	20.0	1.7	4.7	15°							●		
			3-6R	3	0.2	20.0	2.4	4.7	6°							●		
			3-15R	3	0.2	20.0	2.4	4.7	15°							●		
			4-4R	4	0.3	20.0	3.0	4.7	4°							●		
			4-15R	4	0.3	20.0	3.0	4.7	15°							●		
			5-4R	5	0.3	25.0	4.0	5.2	4°							●		
Cut-off/ Grooving			TSC 2	2.0	0.2	20.0	1.7	4.7	-							●		
			3	3.0	0.2	20.0	2.4	4.7	-							●		
			4	4.0	0.2	20.0	3.0	4.7	-							●		
			5	5.0	0.3	25.0	4.0	4.7	-							●		
			6	6.0	0.3	25.0	5.0	4.7	-							●		
			8	8.0	0.4	30.0	6.0	5.2	-							●		

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

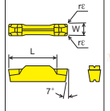
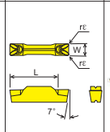
P	Steel																						
M	Stainless Steel																						
K	Iron																						
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood																						
S	Carbide/Powder Metallurgy																						
H	Titanium/Superalloy/Carbon Fiber																						

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			TDT 30	3.0	1.5	20	-	5.5	-				●		●		●	
			40	4.0	2.0	25	-	5.7	-				●		●		●	
			50	5.0	2.5	25	-	5.9	-				●		●		●	
Cut-off/ Processing			TDC 2-6L	2	0.2	20.0	1.7	4.7	6°							●		
			2-8L	2	0.2	20.0	1.7	4.7	8°							●		
			2-15L	2	0.2	20.0	1.7	4.7	15°							●		
			3-6L	3	0.2	20.0	2.4	4.7	6°							●		
			3-15L	3	0.2	20.0	2.4	4.7	15°							●		
			4-4L	4	0.3	20.0	3.0	4.7	4°							●		
			4-15L	4	0.3	20.0	3.0	4.7	15°							●		
			5-4L	5	0.3	25.0	4.0	5.2	4°							●		
Cut-off/ Processing			TDC 2	2.0	0.2	20.0	1.7	4.7	-							●		
			3	3.0	0.2	20.0	2.4	4.7	-							●		
			4	4.0	0.3	20.0	3.0	4.7	-							●		
			5	5.0	0.3	25.0	4.0	5.2	-							●		
			6	6.0	0.3	25.0	5.0	5.2	-							●		
			8	8.0	0.4	30.0	6.0	6.4	-							●		
			TDJ 1.4	1.4	0.16	16.0	1.0	4.0	-							●		
			2	2.0	0.2	20.0	1.7	4.7	-							●		
			3	3.0	0.2	20.0	2.4	4.7	-							●		
			4	4.0	0.3	20.0	3.0	4.7	-							●		
			5	5.0	0.3	25.0	4.0	5.2	-							●		
			6	6.0	0.3	25.0	5.0	5.2	-							●		

N123

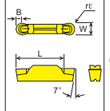
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			N123 D2-0150-0002-T39	1.5	0.2	12.9	-	-	-							●		●
			E2-0200-0002-T39	2.0	0.2	19.0	-	-	-							●		●
			F2-0250-0002-T39	2.5	0.2	18.9	-	-	-							●		●
			G2-0300-0002-T39	3.0	0.2	18.9	-	-	-							●		●
			H2-0400-0002-T39	4.0	0.2	24.1	-	-	-							●		●
			J2-0500-0002-T39	5.0	0.2	24.1	-	-	-							●		●
Cut-off/ Grooving			N123 G2-0300-0004-T23	3.0	0.4	18.4	-	-	-							●		●
			H2-0400-0004-T23	4.0	0.4	23.4	-	-	-							●		●
			H2-0400-0008-T23	4.0	0.8	23.4	-	-	-							●		●
			J2-0500-0004-T23	5.0	0.4	23.4	-	-	-							●		●
			J2-0500-0008-T23	5.0	0.8	23.0	-	-	-							●		●
			K2-0600-0004-T23	6.0	0.4	23.4	-	-	-							●		●
			K2-0600-0008-T23	6.0	0.8	23.0	-	-	-							●		●
			L2-0800-0008-T23	8.0	0.8	28.0	-	-	-							●		●
			L2-0800-0012-T23	8.0	1.2	27.6	-	-	-							●		●

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

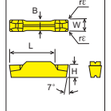
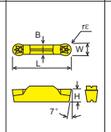
P	Steel																						
M	Stainless Steel																						
K	Iron																						
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood																						
S	Carbide/Powder Metallurgy																						
H	Titanium/Superalloy/Carbon Fiber																						

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			N123 F2-0300-G22	3.00	1.50	18.6	1.3	-	-							●		●
			F2-0318-G22	3.18	1.59	18.6	1.4	-	-							●		●
			G2-0400-G22	4.00	2.00	18.1	1.8	-	-							●		●
			H2-0400-G22	4.00	2.00	23.1	1.8	-	-							●		●
			H2-0475-G22	4.75	2.38	22.9	2.2	-	-							●		●
			H2-0500-G22	5.00	2.50	22.7	2.3	-	-							●		●
			J2-0600-G22	6.00	3.00	22.2	2.8	-	-							●		●
			J2-0635-G22	6.35	3.18	22.0	3.0	-	-							●		●
			L2-0800-G22	8.00	4.00	27.0	3.8	-	-							●		●

WGE

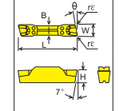
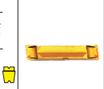
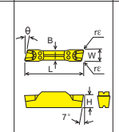
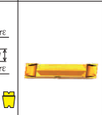
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

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

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Grooving			WGE 20	2.0	0.2	20	-	4.7	-				●		●		●	
			30	3.0	0.2	20	-	5.5	-				●		●		●	
			40	4.0	0.2	25	-	5.7	-				●		●		●	
			50	5.0	0.2	25	-	5.9	-				●		●		●	
Grooving			WGR 30	3.0	1.5	20	-	5.5	-				●		●		●	
			40	4.0	2.0	25	-	5.7	-				●		●		●	
			50	5.0	2.5	25	-	5.9	-				●		●		●	

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	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Cut-off/ Processing			WGE 20R	2.0	0.2	20	-	4.7	-				●		●		●	
			30R	3.0	0.2	20	-	5.5	-				●		●		●	
			40R	4.0	0.2	25	-	5.7	-				●		●		●	
			50R	5.0	0.2	25	-	5.9	-				●		●		●	
Cut-off/ Processing			WGE 20L	2.0	0.2	20	-	4.7	-				●		●		●	
			30L	3.0	0.2	20	-	5.5	-				●		●		●	
			40L	4.0	0.2	25	-	5.7	-				●		●		●	
			50L	5.0	0.2	25	-	5.9	-				●		●		●	

End Face Grooving
Cut-off/ Grooving Processing

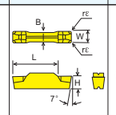
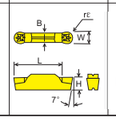
Z..

(Cutting Speed): m/min^{-1} (mm)

Material	Cutter Material	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
	Material Characteristics	Diamond	Cast Iron	Hardened Material	Good Surface	Finishing	Copper/Aluminum	CVD Steel	CVD Steel	Steel High Speed	Stainless Steel	Stainless Steel	HRC60 High Speed	CVD Cast Iron	CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

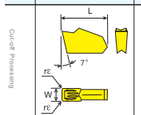
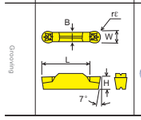
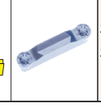
Cutting Environment ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel				●	●		✕	●	✕	●	✕	●		
M	Stainless Steel					●							●	●	●
K	Iron		●		●			✕							
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●					●								
S	Carbide/Powder Metallurgy	●											✕	●	
H	Titanium/Superalloy/Carbon Fiber	●											✕	●	

Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	PMS40	PMS30
Cut-off /Grooving			ZTED 02503-G23	2.5	0.3	17	-	-	-					•			•	•
			0303-G23	3.0	0.3	17	-	-	-					•			•	•
			0404-G23	4.0	0.4	22	-	-	-					•			•	•
			0504-G23	5.0	0.4	22	-	-	-					•			•	•
			0608-G23	6.0	0.8	22	-	-	-					•			•	•
Grooving			ZRED 025-G23	2.5	1.25	17.5	-	-	-					•			•	•
			03-G23	3.0	1.5	17	-	-	-					•			•	•
			04-G23	4.0	2.0	21	-	-	-					•			•	•
			05-G23	5.0	2.5	20	-	-	-					•			•	•
			06-G23	6.0	3.0	19	-	-	-					•			•	•

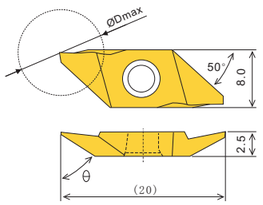
Cutting Environment ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
P	Steel				●	●		✕	●	✕	●	✕	●		
M	Stainless Steel					●							●	●	●
K	Iron		●		●			✕							
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●					●								
S	Carbide/Powder Metallurgy	●											✕	●	
H	Titanium/Superalloy/Carbon Fiber	●											✕	●	

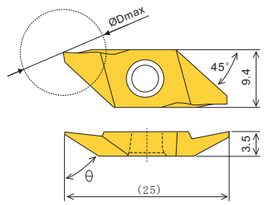
Application	Dimensioning	Product Image	Specification	Dimension W	Dimension rε	Dimension L	Dimension B	Dimension H	Dimension θ	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	PMS40	PMS30
Cut-off Processing			ZQMX 3N11-G24	3.1	0.3	11	-	-	-							•	•	•	•
			4N11-G24	4.1	0.3	11	-	-	-							•	•	•	•
			5N11-G24	5.1	0.3	11	-	-	-							•	•	•	•
			6N11-G24	6.4	0.3	11	-	-	-							•	•	•	•
			7N11-G24	7.0	0.3	14	-	-	-							•	•	•	•
Grooving			ZRKD 06-G25	6.0	3.0	19	-	-	-						•				
			ZRLD 08-G25	8.0	4.0	22	-	-	-						•				

CTPA/CTPW Small Parts Cut-off/Grooving Insert

TBP



TBP
ØDmax=Ø5~10mm



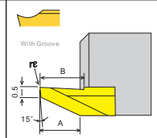
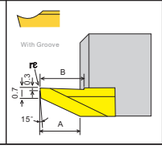
TBPA
ØDmax=Ø5~12mm

(Cutting Speed): m/min⁻¹ (mm)

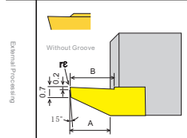
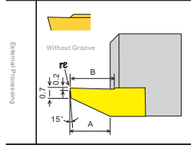
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	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	● ✖ ◐

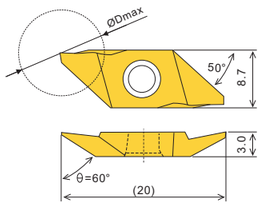
Application	Dimension and Shape	Specification	Dimension A	Dimension B	Dimension rε	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK37	PMS31
External Processing		TBP 55FR00 55FR10 60FR00 60FR10 60FR20	3.0 3.0 3.7 3.7 3.7	5.3	0.00 0.10 0.00 0.10 0.20	55° 55° 60° 60° 60°				●	●	●				●		
External Processing		TBPA 60FR00 60FR10 60FR20	4.5 4.5 4.5	5.3	0.00 0.10 0.20	60°				●	●	●				●		

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

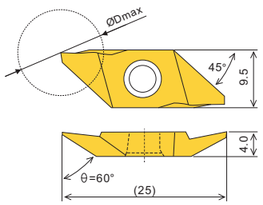
Application	Dimension and Shape	Specification	Dimension W±0.05	Dimension B	Dimension rε	Dimension θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK37	PMS31
External Processing		TBP 60FRV00 60FRV05 60FRV10	4.8	5.3	0.00 0.05 0.10	60°				●	●	●				●		
External Processing		TBPA 60FRV00 60FRV05 60FRV10	6.3	6.8	0.00	60°				●	●	●				●		

☆θ Installation Angle For The Toolholder

TKFB



TKFB
ØDmax=Ø5~9mm



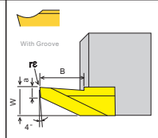
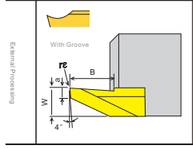
TKFB
ØDmax=Ø5~12mm

(Cutting Speed): m/min⁻¹ (mm)

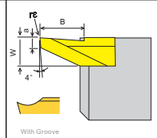
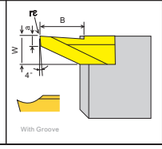
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	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 W	Dimension B	Dimension rε	Dimension a	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK37	PMS31
External Processing		TKFB12R 15005M 28005M 28010M	1.5 2.8 2.8	2.6 4.6 4.6	0.05 0.05 0.1	0.25 0.3 0.3				●	●	●				●		
External Processing		TKFB16R 38005M 38010M	3. 8	0. 3	0.05 0.1	0.3				●	●	●				●		

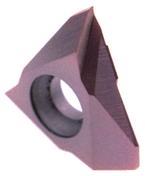
P	Steel	● ◐ ◐ ◐ ✖ ◐ ◐ ◐
M	Stainless Steel	◔ ◔ ◔ ◔ ✖ ◔ ◔ ◔
K	Iron	● ◐ ◐ ✖ ◐ ◐ ◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	● ◐ ◔ ◔ ◔ ◔ ◔ ◔
S	Carbide/Powder Metallurgy	● ✖ ◐
H	Titanium/Superalloy/Carbon Fiber	● ✖ ◐

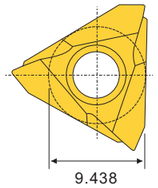
Application	Dimension and Shape	Specification	Dimension W	Dimension B	Dimension rε	Dimension a	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK37	PMS31
External Processing		TKFB12L 15005M 28005M 28010M	1.5 2.8 2.8	2.6 4.6 4.6	0.05 0.05 0.1	0.25 0.3 0.3				●	●	●				●		
External Processing		TKFB16L 38005M 38010M	3. 8	0. 3	0.05 0.1	0.3				●	●	●				●		

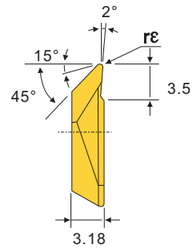
☆θ Installation Angle For The Toolholder

CTPA/CTPW Small Parts Cut-off/Grooving Insert

TB..







(Cutting Speed): m/min⁻¹ (mm)

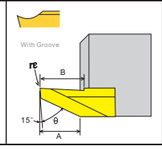
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS35	PMK27	PMK29	PMS31
P	Steel			●	◐	◐	●	◐	✖	◐	◐	◐	◐
M	Stainless Steel					◔		◔	◔	✖	◔	◔	◔
K	Iron	●		◐		◐		●		✖	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●								✖			◐
H	Titanium/Superalloy/Carbon Fiber	●								✖			◐

External Processing

Dimension and Shape

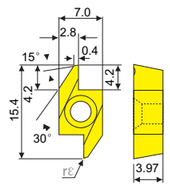


Specification	A	B	rε	θ	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS31
TB 3200R	3.2	3.5	0.00	45°				●	●	●		●	
3205R			0.05					●	●	●		●	
3210R			0.10					●	●	●		●	
3215R			0.15					●	●	●		●	
3220R			0.20					●	●	●		●	

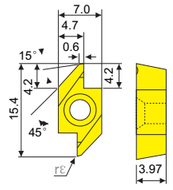
θ

☆θ Installation Angle For The Toolholder

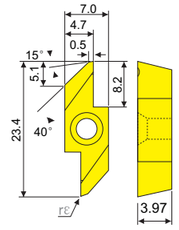
AB..



ABS15
ap=4.2mm



ABW15
ap=4.2mm



ABW23
ap=8.2mm

(Cutting Speed): m/min⁻¹ (mm)

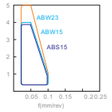
Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	N021 Copper/Aluminum	PMK25 Yellow	PMK26 Purple	PMK30 Stainless Steel
P	Low-Carbon steel				150-600		60-250	70-250	100-250
	High-Carbon steel				150-350		60-150	70-150	80-150
	Hardened Steel			10-30			20-60	20-60	20-60
M	Stainless Steel				200-300		50-150	50-150	70-150
K	Gray Cast Iron		300-1500		100-300		130-210	150-200	150-300
	Ductile Iron		400-800		100-200		100-160	100-150	150-230
N	Magnesium/Zinc/Plastic/Wood	300-1200				300-1200			
	Aluminum Alloy	300-1500				300-1500			
	Hardened Aluminum Alloy	300-800				300-800			
	Copper/Bronze/Brass	300-1000				300-1000			
S	Carbide/Powder Metallurgy	10-30				10-30			
	Silicon Filled Plastic Hard Fiber	400-600				400-600			
H	Titanium/Superalloy/Carbon Fiber	100-200				100-200	20-50	20-50	20-60

Cutting Environment: ● Stable Cutting ◐ General Cutting ◔ General Cutting(Second recommend) ✖ Unstable Cutting

Application		PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS31
P	Steel		●	◐	◐	●	✖	◐	◐	◐
M	Stainless Steel			◔	◔	◔	◔	◔	◔	◔
K	Iron		●	◐		◐	✖	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●					✖			◐
H	Titanium/Superalloy/Carbon Fiber	●					✖			◐

External Processing

Cutting Parameter



Specification	rε	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMK30	PMS31
ABS15R 4005	0.05						●	●		●
4015	0.15						●	●		●
ABW15R 4005	0.05						●	●		●
4015	0.15						●	●		●
ABW23R 5005	0.05						●	●		●
5015	0.15						●	●		●

End Face Grooving
Small Hole Grooving

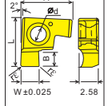
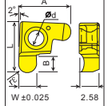
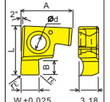
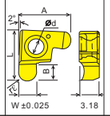
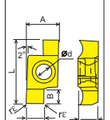
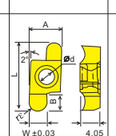
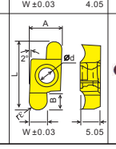
GER

(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material	PCD1	CBN1	CBN2	PM30	PM15	N021	P140	P130	P141	PMS40	PMS30	PMS15	K140	K130
	Material Characteristics	Diamond	Cast Iron	Hardened Material	Good Surface	Finishing	Copper/Aluminum	CVD Steel	CVD Steel	Steel High Speed	Stainless Steel	Stainless Steel	HRC60 High Speed	CVD Cast Iron	CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

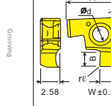
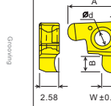
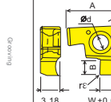
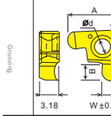
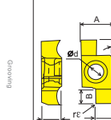
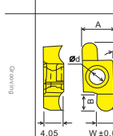
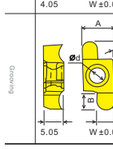
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		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	Dimensioning	Product Image	Specification	W	rε	B	A	L	Ød	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			GER 050-A	0.5	0.05	1.2	6.69	6.5	2.5				•		•	•	•	•
			060-A	0.6									•		•	•	•	•
			070-A	0.7									•		•	•	•	•
			080-A	0.8									•		•	•	•	•
			100-A	1.0									•		•	•	•	•
			120-A	1.2									•		•	•	•	•
			125-A	1.25		1.5							•		•	•	•	•
			140-A	1.4	0.1								•		•	•	•	•
			150-A	1.5									•		•	•	•	•
			180-A	1.8									•		•	•	•	•
			200-A	2.0									•		•	•	•	•
Grooving			GER 100-050AR	1.0	0.5	1.5	6.69	6.5	2.5				•		•	•	•	•
			150-075AR	1.5	0.75								•		•	•	•	•
			200-100AR	2.0	1.0								•		•	•	•	•
Grooving			GER 080-B	0.8	0.05	1.8	2.2	8.46	8.2	2.7			•		•	•	•	•
			100-B	1.0									•		•	•	•	•
			120-B	1.2									•		•	•	•	•
			125-B	1.25									•		•	•	•	•
			130-B	1.3	0.1								•		•	•	•	•
			145-B	1.45									•		•	•	•	•
			150-B	1.5									•		•	•	•	•
			180-B	1.8									•		•	•	•	•
			200-B	2.0									•		•	•	•	•
			225-B	2.25									•		•	•	•	•
			250-B	2.5									•		•	•	•	•
			280-B	2.8	0.2								•		•	•	•	•
			300-B	3.0									•		•	•	•	•
Grooving			GER 100-050BR	1.0	0.5	2.2	8.46	8.2	2.7				•		•	•	•	•
			150-075BR	1.5	0.75								•		•	•	•	•
			200-100BR	2.0	1.0								•		•	•	•	•
			250-125BR	2.5	1.25								•		•	•	•	•
			300-150BR	3.0	1.5								•		•	•	•	•
Grooving			GER 100-C	1.0	0.05	2.5	5.8	11.5	2.8				•		•	•	•	•
			120-C	1.2									•		•	•	•	•
			125-C	1.25									•		•	•	•	•
			140-C	1.4									•		•	•	•	•
			145-C	1.45									•		•	•	•	•
			150-C	1.5									•		•	•	•	•
			160-C	1.6									•		•	•	•	•
			170-C	1.7	0.1								•		•	•	•	•
			185-C	1.85									•		•	•	•	•
			195-C	1.95									•		•	•	•	•
			200-C	2.0									•		•	•	•	•
			225-C	2.25									•		•	•	•	•
			250-C	2.5									•		•	•	•	•
			275-C	2.75									•		•	•	•	•
			280-C	2.8	0.2								•		•	•	•	•
			300-C	3.0									•		•	•	•	•
			320-C	3.2									•		•	•	•	•
			350-C	3.5									•		•	•	•	•
Grooving			GER 100-050CR	1.0	0.5	2.5	5.8	11.5	2.8				•		•	•	•	•
			150-075CR	1.5	0.75								•		•	•	•	•
			200-100CR	2.0	1.0								•		•	•	•	•
			250-125CR	2.5	1.25								•		•	•	•	•
			300-150CR	3.0	1.5								•		•	•	•	•
Grooving			GER 150-075DR	1.5	0.75	3.2	6.8	16.4	3.4				•		•	•	•	•
			200-100DR	2.0	1.0								•		•	•	•	•
			250-125DR	2.5	1.25	4.5							•		•	•	•	•
			300-150DR	3.0	1.5								•		•	•	•	•

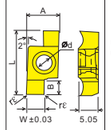
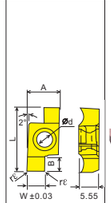
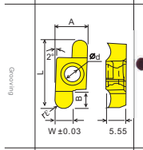
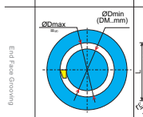
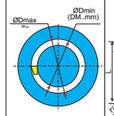
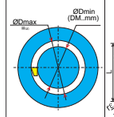
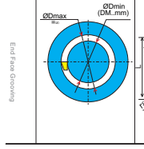
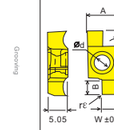
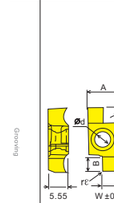
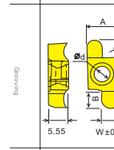
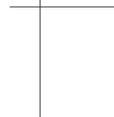
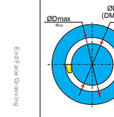
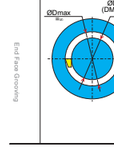
Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		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	Dimensioning	Product Image	Specification	W	rε	B	A	L	Ød	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			GEL 050-A	0.5	0.05	1.2	6.69	6.5	2.5				•		•	•	•	•
			060-A	0.6									•		•	•	•	•
			070-A	0.7									•		•	•	•	•
			080-A	0.8									•		•	•	•	•
			100-A	1.0									•		•	•	•	•
			120-A	1.2									•		•	•	•	•
			125-A	1.25		1.5							•		•	•	•	•
			140-A	1.4	0.1								•		•	•	•	•
			150-A	1.5									•		•	•	•	•
			180-A	1.8									•		•	•	•	•
			200-A	2.0									•		•	•	•	•
Grooving			GEL 100-050AR	1.0	0.5	1.5	6.69	6.5	2.5				•		•	•	•	•
			150-075AR	1.5	0.75								•		•	•	•	•
			200-100AR	2.0	1.0								•		•	•	•	•
Grooving			GEL 080-B	0.8	0.05	1.8	2.2	8.46	8.2	2.7			•		•	•	•	•
			100-B	1.0									•		•	•	•	•
			120-B	1.2									•		•	•	•	•
			125-B	1.25									•		•	•	•	•
			130-B	1.3	0.1								•		•	•	•	•
			145-B	1.45									•		•	•	•	•
			150-B	1.5									•		•	•	•	•
			180-B	1.8									•		•	•	•	•
			200-B	2.0									•		•	•	•	•
			225-B	2.25									•		•	•	•	•
			250-B	2.5									•		•	•	•	•
			280-B	2.8	0.2								•		•	•	•	•
			300-B	3.0									•		•	•	•	•
Grooving			GEL 100-050BR	1.0	0.5	2.2	8.46	8.2	2.7				•		•	•	•	•
			150-075BR	1.5	0.75								•		•	•	•	•
			200-100BR	2.0	1.0								•		•	•	•	•
			250-125BR	2.5	1.25								•		•	•	•	•
			300-150BR	3.0	1.5								•		•	•	•	•
Grooving			GEL 100-C	1.0	0.05	2.5	5.8	11.5	2.8				•		•	•	•	•
			120-C	1.2									•		•	•	•	•
			125-C	1.25									•		•	•	•	•
			140-C	1.4									•		•	•	•	•
			145-C	1.45									•		•	•	•	•
			150-C	1.5									•		•	•	•	•
			160-C	1.6									•		•	•	•	•
			170-C	1.7	0.1								•		•	•	•	•
			185-C	1.85									•		•	•	•	•
			195-C	1.95									•		•	•	•	•
			200-C	2.0									•		•	•	•	•
			225-C	2.25									•		•	•	•	•
			250-C	2.5									•		•	•	•	•
			275-C	2.75									•		•	•	•	•
			280-C	2.8	0.2								•		•	•	•	•
			300-C	3.0									•		•	•	•	•
			320-C	3.2									•		•	•	•	•
			350-C	3.5									•		•	•	•	•
Grooving			GEL 100-050CR	1.0	0.5	2.5	5.8	11.5	2.8				•		•	•	•	•
			150-075CR	1.5	0.75								•		•	•	•	•
			200-100CR	2.0	1.0								•		•	•	•	•
			250-125CR	2.5	1.25								•		•	•	•	•
			300-150CR	3.0	1.5								•		•	•	•	•
Grooving			GEL 150-075DR	1.5	0.75	3.2	6.8	16.4	3.4				•		•	•	•	•
			200-100DR	2.0	1.0								•		•	•	•	•
			250-125DR	2.5	1.25	4.5							•		•	•	•	•
			300-150DR	3.0	1.5								•		•	•	•	•

Cutting Environment: ● Stable Cutting ● General Cutting ✕ Unstable Cutting

		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	Dimensioning	Product Image	Specification	W	rε	B	A	L	Ød	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
Grooving			GER 100-D	1.0	0.05	2.25	6.8	16.4	3.4				•		•	•	•	•
			120-D	1.2									•		•	•	•	•
			125-D	1.25									•		•	•	•	•
			140-D	1.4									•		•	•	•	•
			145-D	1.45									•		•	•	•	•
			150-D	1.5									•		•	•	•	•
			170-D	1.7									•		•	•	•	•
			185-D	1.85	0.1	3.0							•		•	•	•	•
			195-D	1.95									•		•	•	•	•
			200-D	2.0									•		•	•	•	•
			225-D	2.25									•		•	•	•	•
			230-D	2.3		3.6							•		•	•	•	•
			250-D	2.5									•		•	•	•	•
			275-D	2.75									•		•	•	•	•
			280-D	2.8									•		•	•	•	•
			300-D	3.0	0.2								•		•	•	•	•
			320-D	3.2		4.5							•		•	•	•	•
			330-D	3.3									•		•	•	•	•
			350-D	3.5									•		•	•	•	•
			400-D	4.0									•		•	•	•	•
Grooving			GER 100-E	1.0	0.05	2.5	9.54	21.7	4.4				•		•	•	•	•
			150-E	1.5									•		•	•	•	•
			170-E	1.7		3.0							•		•	•	•	•
			185-E	1.85	0.1								•		•	•	•	•
			195-E	1.95									•		•	•	•	•
			200-E	2.0									•		•	•	•	•
			225-E	2.25		3.2							•		•	•	•	•
			230-E	2.3									•		•	•	•	•
			250-E	2.5									•		•	•	•	•
			275-E	2.75									•		•	•	•	•
			280-E	2.8		4.5							•		•	•	•	•
			300-E	3.0	0.2								•		•	•	•	•
			330-E	3.3									•		•	•	•	•
			350-E	3.5		5.5							•		•	•	•	•
			400-E	4.0									•		•	•	•	•
			430-E	4.3									•		•	•	•	•
			450-E	4.5									•		•	•	•	•
			460-E	4.6		6.5							•		•	•	•	•
			500-E	5.0									•		•	•	•	•
Grooving			GER 250-125ER	2.5	1.25	5.5	9.54	21.7	4.4				•		•	•	•	•
			300-150ER	3.0	1.5								•		•	•	•	•
			350-175ER	3.5	1.75								•		•	•	•	•
			400-200ER	4.0	2.0								•		•	•	•	•
			450-225ER	4.5	2.25	6.5							•		•	•	•	•
			500-250ER	5.0	2.5								•		•	•	•	•
End Face Grooving			GER 100DM06-D	1.0	0.05	2.5	6.8	16.4	3.4				•		•	•	•	•
			150DM10-D	1.5	0.1	2.8							•		•	•	•	•
			200DM10-D	2.0	0.1	3.5							•		•	•	•	•
			250DM15-D	2.5	0.2	4.5							•		•	•	•	•
			300DM15-D	3.0	0.2	4.5							•		•	•	•	•
			400DM15-D	4.0	0.2	4.5							•		•	•	•	•
End Face Grooving			GER150DM10R075-D	1.5	0.75	2.5	6.8	16.4	3.4				•		•	•	•	•
			200DM10R100-D	2.0	1.0	3.5							•		•	•	•	•
			250DM15R125-D	2.5	1.25	4.5							•		•	•	•	•
			300DM15R150-D	3.0	1.5	4.5							•		•	•	•	•
			400DM15R200-D	4.0	2.0	4.5							•		•	•	•	•
End Face Grooving			GER 150DM10-E	1.5	0.1	3.6	9.54	21.7	4.4				•		•	•	•	•
			200DM10-E	2.0	0.1	4.8							•		•	•	•	•
			250DM15-E	2.5	0.2	6.0							•		•	•	•	•
			300DM15-E	3.0	0.2	6.5							•		•	•	•	•
			400DM15-E	4.0	0.2	6.5							•		•	•	•	•
			450DM15-E	4.5	0.2	6.5							•		•	•	•	•
			500DM15-E	5.0	0.2	6.5							•		•	•	•	•
End Face Grooving			GER150DM10R075-E	1.5	0.75	3.6	9.54	21.7	4.4				•		•	•	•	•
			200DM10R100-E	2.0	1.0	4.8							•		•	•	•	•
			250DM15R125-E	2.5	1.25	6.0							•		•	•	•	•
			300DM15R150-E	3.0	1.5	6.5							•		•	•	•	•
			400DM15R200-E	4.0	2.0	6.5							•		•	•	•	•
			500DM15R250-E	5.0	2.5	6.5							•		•	•	•	•
Grooving			GEL 100-D	1.0	0.05	2.25	6.8	16.4	3.4				•		•	•	•	•
			120-D	1.2									•		•	•	•	•
			125-D	1.25									•		•	•	•	•
			140-D	1.4									•		•	•	•	•
			145-D	1.45									•		•	•	•	•
			150-D	1.5									•		•	•	•	•
			170-D	1.7									•		•	•	•	•
			185-D	1.85	0.1	3.0							•		•	•	•	•
			195-D	1.95									•		•	•	•	•
			200-D	2.0									•		•	•	•	•
			225-D	2.25									•		•	•	•	•
			230-D	2.3		3.6							•		•	•	•	•
			250-D	2.5									•		•	•	•	•
			275-D	2.75									•		•	•	•	•
			280-D	2.8									•		•	•	•	•
			300-D	3.0	0.2								•		•	•	•	•
			320-D	3.2		4.5							•		•	•	•	•
			330-D	3.3									•		•	•	•	•
			350-D	3.5									•		•	•	•	•
			400-D	4.0									•		•	•	•	•
Grooving			GEL 100-E	1.0	0.05	2.5	9.54	21.7	4.4				•		•	•	•	•
			150-E	1.5									•		•	•	•	•
			170-E	1.7		3.0							•		•	•	•	•
			185-E	1.85	0.1								•		•	•	•	•
			195-E	1.95									•		•	•	•	•
			200-E	2.0									•		•	•	•	•
			225-E	2.25		3.2							•		•	•	•	•
			230-E	2.3									•		•	•	•	•
			250-E	2.5									•		•	•	•	•
			275-E	2.75									•		•	•	•	•
			280-E	2.8		4.5							•		•	•	•	•
			300-E	3.0	0.2								•		•	•	•	•
			330-E	3.3									•		•	•	•	•
			350-E	3.5		5.5							•		•	•	•	•
			400-E	4.0									•		•	•	•	•
			430-E	4.3									•		•	•	•	•
			450-E	4.5									•		•	•	•	•
			460-E	4.6		6.5							•		•	•	•	•
			500-E	5.0									•		•	•	•	•
Grooving			GEL 250-125ER	2.5	1.25	5.5	9.54	21.7	4.4				•		•	•	•	•
			300-150ER	3.0	1.5								•		•	•	•	•
			350-175ER	3.5	1.75								•		•	•	•	•
			400-200ER	4.0	2.0								•		•	•	•	•
			450-225ER	4.5	2.25	6.5							•		•	•	•	•
			500-250ER	5.0	2.5								•		•	•	•	•
End Face Grooving																		
End Face Grooving																		
End Face Grooving			GEL 150DM10-E	1.5	0.1	3.6	9.54	21.7	4.4				•		•	•	•	•
			200DM10-E	2.0	0.1	4.8							•		•	•	•	•
			250DM15-E	2.5	0.2	6.0							•		•	•	•	•
			300DM15-E	3.0	0.2	6.5							•		•	•	•	•
			400DM15-E	4.0	0.2	6.5							•		•	•	•	•
			450DM15-E	4.5	0.2	6.5							•		•	•	•	•
			500DM15-E	5.0	0.2	6.5							•		•	•	•	•
End Face Grooving			GEL 150DM10R075-E	1.5	0.75	3.6	9.54	21.7	4.4				•		•	•	•	•
			200DM10R100-E	2.0	1.0	4.8							•		•	•	•	•
			250DM15R125-E	2.5	1.25	6.0							•		•	•	•	•
			300DM15R150-E	3.0	1.5	6.5							•		•	•	•	•
			400DM15R200-E	4.0	2.0	6.5							•		•	•	•	•
			500DM15R250-E	5.0	2.5	6.5							•		•	•	•	•

GR

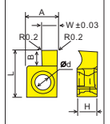
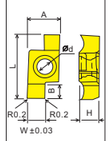
(Cutting Speed): m/min⁻¹ (mm)

Material	Cutter Material / Material Characteristics	PCD1 Diamond	CBN1 Cast Iron	CBN2 Hardened Material	PM30 Good Surface	PM15 Finishing	N021 Copper/Aluminum	P140 CVD Steel	P130 CVD Steel	P141 Steel High Speed	PMS40 Stainless Steel	PMS30 Stainless Steel	PMS15 HRC60 High Speed	K140 CVD Cast Iron	K130 CVD High Speed
P	Low-Carbon steel				150-600	150-800		70-500	150-500	150-600	70-250	100-250	80-300		
	High-Carbon steel				150-350	150-500		70-250	80-350	100-400	70-150	80-150	60-200		
	Hardened Steel			10-30							20-60	20-60	20-80		
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
	Ductile Iron		400-800		100-200	100-250								150-200	150-250
N	Magnesium/Zinc/Plastic/Wood	300-1200					300-1200								
	Aluminum Alloy	300-1500					300-1500								
	Hardened Aluminum Alloy	300-800					300-800								
	Copper/Bronze/Brass	300-1000					300-1000								
S	Carbide/Powder Metallurgy	10-30					10-30						20-50		
	Silicon Filled Plastic Hard Fiber	400-600					400-600								
H	Titanium/Superalloy/Carbon Fiber	100-200					100-200				20-50	20-60	30-80		

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	● ✕ ●

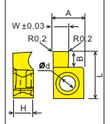
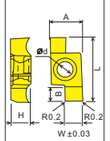
Application: Grooving

Dimensioning	Product Image	Specification	W	B	A	L	H	Ød	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		6GR 100	1.0	1.5								●	●			●	
		150	1.5	1.5	5.56	6.44	2.34	2.3				●	●			●	
		200	2.0	1.5								●	●			●	
		7GR 100	1.0	1.5								●	●			●	
		150	1.5	1.5	5.56	7.36	3.08	2.58				●	●			●	
		200	2.0	1.5								●	●			●	
		8GR 100	1.0	1.5								●	●			●	
		150	1.5	2.0								●	●			●	
		200	2.0	2.0	5.56	10.2	3.87	2.58				●	●			●	
		250	2.5	2.0								●	●			●	
		300	3.0	2.0								●	●			●	
		350	3.5	2.0								●	●			●	
		9GR 100	1.0	1.5								●	●			●	
		150	1.5	2.0								●	●			●	
		200	2.0	3.0								●	●			●	
		250	2.5	3.0	6.35	13.0	4.66	2.86				●	●			●	
		300	3.0	3.0								●	●			●	
		350	3.5	3.0								●	●			●	
		15GR 100	1.0	1.5													
		150	1.5	2.0													
		200	2.0	3.0													
		250	2.5	3.0													
		300	3.0	3.0	9.2	20.8	5.1	4.8									
		350	3.5	3.0													
		400	4.0	4.0													
		450	4.5	4.0													
		500	5.0	5.0													

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: Grooving

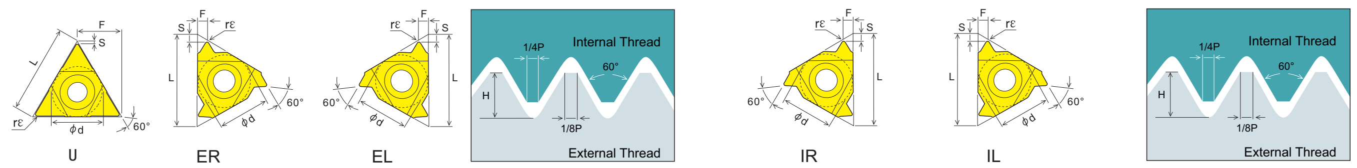
Dimensioning	Product Image	Specification	W	B	A	L	H	Ød	PCD1	CBN1	CBN2	PM30	N021	P140	P130	PMS40	PMS30
		6GL 100	1.0	1.5								●	●			●	
		150	1.5	1.5	5.56	6.44	2.34	2.3				●	●			●	
		200	2.0	1.5								●	●			●	
		7GL 100	1.0	1.5								●	●			●	
		150	1.5	1.5	5.56	7.36	3.08	2.58				●	●			●	
		200	2.0	1.5								●	●			●	
		8GL 100	1.0	1.5								●	●			●	
		150	1.5	2.0								●	●			●	
		200	2.0	2.0	5.56	10.2	3.87	2.58				●	●			●	
		250	2.5	2.0								●	●			●	
		300	3.0	2.0								●	●			●	
		350	3.5	2.0								●	●			●	
		9GL 100	1.0	1.5								●	●			●	
		150	1.5	2.0								●	●			●	
		200	2.0	3.0								●	●			●	
		250	2.5	3.0	6.35	13.0	4.66	2.86				●	●			●	
		300	3.0	3.0								●	●			●	
		350	3.5	3.0								●	●			●	
		15GL 100	1.0	1.5													
		150	1.5	2.0													
		200	2.0	3.0													
		250	2.5	3.0													
		300	3.0	3.0	9.2	20.8	5.1	4.8									
		350	3.5	3.0													
		400	4.0	4.0													
		450	4.5	4.0													
		500	5.0	5.0													

ISO

Thread Application: General Industry

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel			●	◕		◕	●	✖	◕	◕	◕
M	Stainless Steel				◕		◕	◕	✖	◕	◕	◕
K	Iron		●		◕		◕		✖	◕	◕	◕
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◕	○	○	○	○	○	○
S	Carbide/Powder Metallurgy	●							✖			◕
H	Titanium/Superalloy/Carbon Fiber	●							✖			◕

● Stable Cutting ◕ General Cutting ○ General Cutting(Second recommend) ✖ Unstable Cutting



Application	Specification E[ ]R	Specification E[ ]L	Pitch of Screw (mm)	Pitch of Screw (tpi)	ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER A60	11EL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(ERM) AG60	AG60	0.5-2.5	48-10			0.05	0.9	1.2	●	●	●	●	●	●	●	●	●	●	●
	16ER A60	16EL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(ERM) G60	G60	1.75-3.0	14-8			0.27	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	AG60	AG60	0.5-3.0	48-8			0.08	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22ER N60 (ERM)	22EL N60	3.5-5.0	7-5	12.7	22	0.53	1.7	2.5	●	●	●	●	●	●	●	●	●	●	●
	27ER Q60	27EL Q60	5.5-6.0	4.5-4	15.875	27	0.64	2.1	3.1	●	●	●	●	●	●	●	●	●	●	●

Application	Specification E[ ]R	Specification E[ ]L	Pitch (tpi)	Depth Hmin	ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 035 ISO	11EL 035 ISO	0.35	0.21	6.35	11	0.04	0.8	0.4					●				●	●	●
	(ERM) 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					●				●	●	●
	16ER 035 ISO	16EL 035 ISO	0.35	0.21	9.525	16	0.04	0.8	0.4					●				●	●	●
	(ERM) 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					●				●	●	●
	200 ISO	200 ISO	2.00	1.23			0.25	1.0	1.3	●	●	●		●	●	●	●	●	●	●
	250 ISO	250 ISO	2.50	1.53			0.31	1.1	1.5	●	●	●		●	●	●	●	●	●	●
	300 ISO	300 ISO	3.00	1.84			0.38	1.2	1.6	●	●	●		●	●	●	●	●	●	●
	350 ISO	350 ISO	3.50	2.15			0.44	1.6	2.3	●	●	●		●	●	●	●	●	●	●
	22ER 350 ISO	22EL 350 ISO	3.50	2.15	12.7	22	0.44	1.6	2.3	●	●	●		●	●	●	●	●	●	●
	(ERM) 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	●	●	●		●	●	●	●	●	●	●
	27ER 550 ISO	27EL 550 ISO	5.50	3.37	15.875	27	0.70	1.9	2.7					●				●	●	●
	(ERM) 600 ISO	600 ISO	6.00	3.68			0.78	2.0	2.9					●				●	●	●

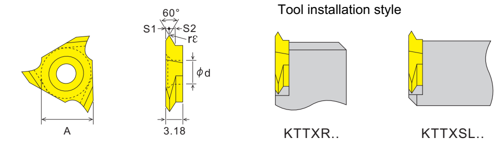
Application	Specification [ ]U		Pitch of Screw (mm)	Pitch of Screw (tpi)	ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	22UER	U60	5.5-8.0	4.5-3.25	12.7	22	0.28	0.6	11.0					●				●	●	
	27UER	U60	6.5-9.0	4-2.75	15.88	27	0.28	1.0	13.7					●				●	●	
	22UER	550 ISO	5.5		12.7	22	0.70	2.3	11.0					●				●	●	
		600 ISO	6.0		12.7	22	0.78	2.6	11.0					●				●	●	
	27UER	800 ISO	8.0		15.88	27	1.08	2.4	13.7					●				●	●	
	22UIR	550 ISO	5.5		12.7	22	0.35	2.4	11.0					●				●	●	
		600 ISO	6.0		12.7	22	0.39	2.1	11.0					●				●	●	
	27UIR	800 ISO	8.0		15.88	27	0.53	2.4	13.7					●				●	●	

Application	Specification I[ ]R	Specification I[ ]L	Pitch of Screw (mm)	Pitch of Screw (tpi)	ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	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	●	●	●	●	●	●	●	●	●	●	●
	11IR A60	11EL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(IRM) AG60	AG60	0.5-2.5	48-10			0.05	0.9	1.2	●	●	●	●	●	●	●	●	●	●	●
	16IR A60	16EL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(IRM) G60	G60	1.75-3.0	14-8			0.16	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	AG60	AG60	0.5-3.0	48-8			0.05	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22IR N60 (IRM)	22EL N60	3.5-5.0	7-5	12.7	22	0.30	1.7	2.5	●	●	●	●	●	●	●	●	●	●	●
	27IR Q60	27EL Q60	5.5-6.0	4.5-4	15.875	27	0.30	1.8	2.7	●	●	●	●	●	●	●	●	●	●	●

Application	Specification I[ ]R	Specification I[ ]L	Pitch (tpi)	Depth Hmin	ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR 050ISO	06IL 050ISO	0.50	0.29	3.97	6	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					●				●	●	●
	08IR 050ISO	08IL 050ISO	0.50	0.29	4.76	8	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					●				●	●	●
	150ISO	150ISO	1.50	0.87			0.08	0.6	0.7					●				●	●	●
	175ISO	175ISO	1.75	1.01			0.10	0.6	0.8					●				●	●	●
	11IR 035 ISO	11IL 035 ISO	0.35	0.20	6.35	11	0.02	0.8	0.3					●				●	●	●
	(IRM) 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	0.6	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					●				●	●	●
	200 ISO	200 ISO	2.00	1.15			0.12	0.9	1.1					●				●	●	●
	250 ISO	250 ISO	2.50	1.44			0.15	0.9	1.1	●	●	●		●	●	●	●	●	●	●
	16IR 035 ISO	16IL 035 ISO	0.35	0.20	9.525	16	0.02	0.8	0.3					●				●	●	●
	(IRM) 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	0.6	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	1.2					●				●	●	●
	200 ISO	200 ISO	2.00	1.15			0.12	1.0	1.3	●	●	●		●	●	●	●	●	●	●
	250 ISO	250 ISO	2.50	1.44			0.15	1.1	1.5	●	●	●		●	●	●	●	●	●	●
	300 ISO	300 ISO	3.00	1.73			0.18	1.1	1.5	●	●	●		●	●	●	●	●	●	●
	350 ISO	350 ISO	3.50	2.02			0.22	1.6	2.3	●	●	●		●	●	●	●	●	●	●
	22IR 350 ISO	22IL 350 ISO	3.50	2.02	12.7	22	0.22	1.6	2.3					●				●	●	●
	(IRM) 400 ISO	400 ISO	4.00	2.31			0.25	1.6	2.3					●				●	●	●
	450 ISO	450 ISO	4.50	2.60			0.29	1.6	2.4					●				●	●	●
	500 ISO	500 ISO	5.00	2.89			0.32	1.6	2.3					●				●	●	●
	27IR 550 ISO	27IL 550 ISO	5.50	3.17	15.875	27	0.35	1.6	2.3					●				●	●	●
	(IRM) 600 ISO	600 ISO	6.00	3.46			0.39	1.8	2.5					●				●	●	●

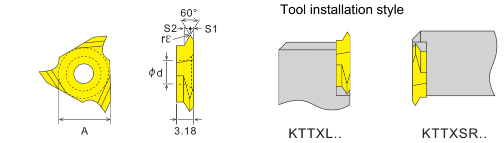
ISO Thread Turning Insert

TTX32R



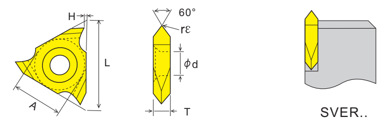
Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTX32R	6000	0.5-1.0	56-32	0.00	0.6	1.12	9.525	4.4					●	●	●		●	●	
		6000S	0.5-1.0	56-32	0.00	0.3	1.12							●	●	●		●	●	
		60005	0.5-1.0	48-32	0.05	0.6	1.12							●	●	●		●	●	
		60005S	0.5-1.0	48-32	0.05	0.3	1.12							●	●	●		●	●	
		6001	1.0-2.0	28-14	0.1	1.1	1.62							●	●	●		●	●	
		6002	1.5-2.5	16-10	0.2	1.1	1.62							●	●	●		●	●	
		6003	2.5	11-10	0.3	1.1	1.62							●	●	●		●	●	

TTX32L



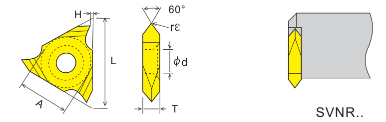
Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTX32L	6000	0.5-1.0	56-32	0.00	0.6	1.12	9.525	4.4					●	●	●		●	●	
		6000S	0.5-1.0	56-32	0.00	0.3	1.12							●	●	●		●	●	
		60005	0.5-1.0	48-32	0.05	0.6	1.12							●	●	●		●	●	
		60005S	0.5-1.0	48-32	0.05	0.3	1.12							●	●	●		●	●	
		6001	1.0-2.0	28-14	0.1	1.1	1.62							●	●	●		●	●	
		6002	1.5-2.5	16-10	0.2	1.1	1.62							●	●	●		●	●	
		6003	2.5	11-10	0.3	1.1	1.62							●	●	●		●	●	

VER..



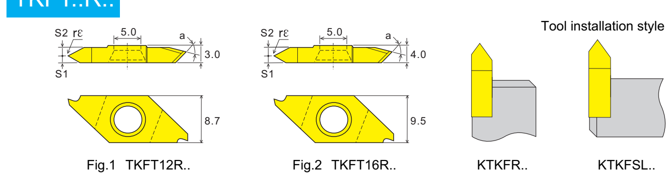
Application	Specification VE[ ]R		Pitch (mm)	H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	16VER	AG60	0.5-3.0	-	0.07	16	3.65	9.525	4.0					●				●	●	
		100ISO	1.0	0.7	0.07									●				●	●	
		150ISO	1.5	1.0	0.11									●				●	●	
		200ISO	2.0	1.3	0.14									●				●	●	
		250ISO	2.5	1.5	0.18									●				●	●	
		300ISO	3.0	1.6	0.22									●				●	●	
	22VER	400ISO	4.0	2.0	0.29	22	4.9	12.7	5.1					●				●	●	
		500ISO	5.0	2.4	0.36									●				●	●	
		600ISO	6.0	2.7	0.43									●				●	●	
	27VER	V60	6.0-9.0	-	0.87	27	8.7	15.87	6.35					●				●	●	
		800ISO	8.0	-										●				●	●	
		10.0ISO	10.0	-										●				●	●	

VNR..



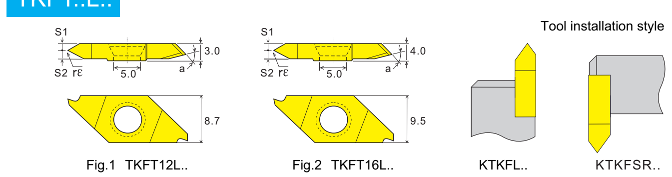
Application	Specification VN[ ]R		Pitch (mm)	H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	16VNR	AG60	0.5-3.0	-	0.07	16	3.65	9.525	4.0					●				●	●	
		100ISO	1.0	0.7	0.07									●				●	●	
		150ISO	1.5	1.0	0.08									●				●	●	
		200ISO	2.0	1.3	0.12									●				●	●	
		250ISO	2.5	1.5	0.15									●				●	●	
		300ISO	3.0	1.6	0.18									●				●	●	
	22VNR	400ISO	4.0	2.0	0.25	22	4.9	12.7	5.1					●				●	●	
		500ISO	5.0	2.4	0.32									●				●	●	
		600ISO	6.0	2.7	0.39									●				●	●	
	27VNR	V60	6.0-9.0	-	0.43	27	8.7	15.87	6.35					●				●	●	
		800ISO	8.0	-										●				●	●	
		10.0ISO	10.0	-										●				●	●	

TKFT..R..



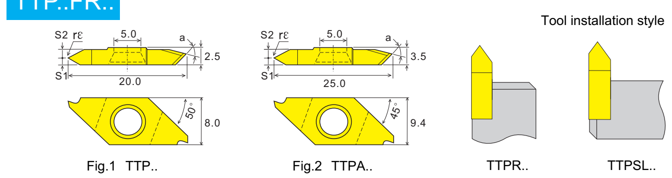
Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TKFT12R	A6000	0.2-0.6	64-48	<0.05	0.4	2.1	60°	1					●	●	●			●	
		B6000	0.2-0.6	64-48	<0.05	2.1	0.4							●	●	●			●	
		A60005	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		B60005	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		N6001	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
	TKFT16R	A6000	0.2-0.6	64-48	<0.05	0.4	2.1	60°	2					●	●	●			●	
		B6000	0.2-0.6	64-48	<0.05	2.1	0.4							●	●	●			●	
		A60005	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		B60005	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		N6001	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	

TKFT..L..



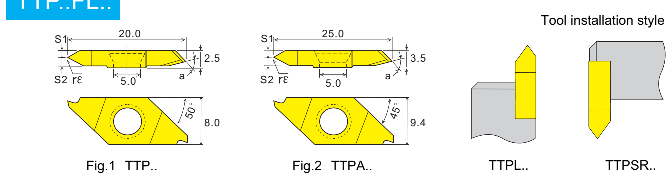
Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TKFT12L	A6000	0.2-0.6	64-48	<0.05	2.1	0.4	60°	1					●	●	●			●	
		B6000	0.2-0.6	64-48	<0.05	0.4	2.1							●	●	●			●	
		A60005	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		B60005	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		N6001	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
		A6000	0.2-0.6	64-48	<0.05	2.1	0.4	60°	2					●	●	●			●	
		B6000	0.2-0.6	64-48	<0.05	0.4	2.1							●	●	●			●	
		A60005	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
	TKFT16L	B60005	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		N6001	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	

TTP..FR..



Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTP60	FR4A	0.2-0.6	64-48	<0.05	0.4	2.1	60°	1					●	●	●			●	
		FR4B	0.2-0.6	64-48	<0.05	2.1	0.4							●	●	●			●	
		FR8A	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		FR8B	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		FRN	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
		FRN02	1.0-1.50	24-18	0.2	1.25	1.25							●	●	●			●	
	TTPA60	FR4A	0.2-0.6	64-48	<0.05	0.4	2.1	60°	2					●	●	●			●	
		FR4B	0.2-0.6	64-48	<0.05	2.1	0.4							●	●	●			●	
		FR8A	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		FR8B	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		FRN	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
		FRN02	1.0-1.50	24-18	0.2	1.25	1.25							●	●	●			●	

TTP..FL..

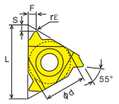


Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTP60	FL4A	0.2-0.6	64-48	<0.05	2.1	0.4	60°	1					●	●	●			●	
		FL4B	0.2-0.6	64-48	<0.05	0.4	2.1							●	●	●			●	
		FL8A	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		FL8B	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		FLN	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
		FLN02	1.0-1.50	24-18	0.2	1.25	1.25							●	●	●			●	
	TTPA60	FL4A	0.2-0.6	64-48	<0.05	2.1	0.4	60°	2					●	●	●			●	
		FL4B	0.2-0.6	64-48	<0.05	0.4	2.1							●	●	●			●	
		FL8A	0.5-1.25	48-24	0.05	1.7	0.8							●	●	●			●	
		FL8B	0.5-1.25	48-24	0.05	0.8	1.7							●	●	●			●	
		FLN	1.0-1.50	24-18	0.1	1.25	1.25							●	●	●			●	
		FLN02	1.0-1.50	24-18	0.2	1.25	1.25							●	●	●			●	

W Inch Thread Turning Insert

W

Thread Application: Pipe thread for industrial machinery



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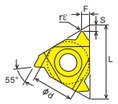

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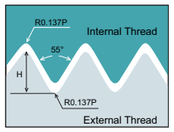
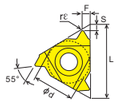


Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	● Stable Cutting; ◐ General Cutting; ◔ General Cutting(Second recommend); ✕ Unstable Cutting											
P	Steel		●	◐		●	●	✕	◐	●	●	●
M	Stainless Steel			◔		◐	◐	✕	◐	◐	◐	◔
K	Iron	●		◔		◐		✕	✕	◐	●	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			●	◐	◐	◐	◐	◐	◐	◔
S	Carbide/Powder Metallurgy	●						✕				●
H	Titanium/Superalloy/Carbon Fiber	●						✕				●



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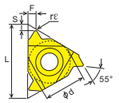

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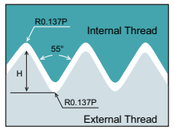


Application	Specification E[ ]R	Specification E[ ]L	Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER A55	11EL A55	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(ERM) AG55	AG55	0.5-2.5	48-10			0.05	0.9	1.2	●	●	●	●	●	●	●	●	●	●	●
	16ER A55	16EL A55	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(ERM) G55	G55	1.75-3.0	14-8			0.21	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	AG55	AG55	0.5-3.0	48-8			0.07	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22ER N55 (ERM)	22EL N55	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	●	●	●	●	●	●	●	●	●	●	●
	27ER Q55	27EL Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9	●	●	●	●	●	●	●	●	●	●	●

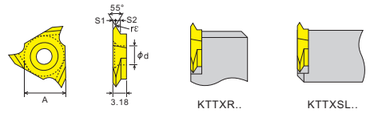
Application	Specification I[ ]R	Specification I[ ]L	Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR A55	06IL A55	0.5-1.25	48-20	3.97	6	0.05	0.6	0.6	●	●	●	●	●	●	●	●	●	●	●
	08IR A55	08IL A55	0.5-1.5	48-16	4.76	8	0.05	0.6	0.7	●	●	●	●	●	●	●	●	●	●	●
	11IR A55	11EL A55	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(IRM) AG55	AG55	0.5-2.5	48-10			0.05	0.9	1.2	●	●	●	●	●	●	●	●	●	●	●
	16IR A55	16EL A55	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	(IRM) G55	G55	1.75-3.0	14-8			0.21	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	AG55	AG55	0.5-3.0	48-8			0.07	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22IR N55 (IRM)	22EL N55	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	●	●	●	●	●	●	●	●	●	●	●
	27IR Q55	27EL Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9	●	●	●	●	●	●	●	●	●	●	●

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 72 W	11EL 72 W	0.23	72	6.35	11	0.02	0.7	0.4				●				●	●	●	●
	(ERM) 60 W	60 W	0.27	60			0.02	0.7	0.4				●				●	●	●	●
	56 W	56 W	0.29	56			0.02	0.7	0.4				●				●	●	●	●
	48 W	48 W	0.34	48			0.04	0.6	0.6				●				●	●	●	●
	40 W	40 W	0.41	40			0.06	0.6	0.6				●				●	●	●	●
	36 W	36 W	0.45	36			0.07	0.6	0.6				●				●	●	●	●
	32 W	32 W	0.51	32			0.09	0.6	0.6				●				●	●	●	●
	28 W	28 W	0.58	28			0.09	0.6	0.7				●				●	●	●	●
	26 W	26 W	0.63	26			0.10	0.7	0.8				●				●	●	●	●
	24 W	24 W	0.68	24			0.11	0.7	0.8				●				●	●	●	●
	22 W	22 W	0.74	22			0.13	0.8	0.9				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	19 W	19 W	0.86	19			0.15	0.8	1.0				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.8	1.0	●	●	●	●	●	●	●	●	●	●	●
	16 W	16 W	1.02	16			0.18	0.9	1.1				●				●	●	●	●
	14 W	14 W	1.16	14			0.21	1.0	1.2				●				●	●	●	●
	16ER 72 W	16EL 72 W	0.23	72	9.525	16	0.02	0.7	0.4				●				●	●	●	●
	(ERM) 60 W	60 W	0.27	60			0.02	0.7	0.4				●				●	●	●	●
	56 W	56 W	0.29	56			0.02	0.7	0.4	●	●	●	●	●	●	●	●	●	●	●
	48 W	48 W	0.34	48			0.04	0.6	0.6				●				●	●	●	●
	40 W	40 W	0.41	40			0.06	0.6	0.6				●				●	●	●	●
	36 W	36 W	0.45	36			0.07	0.6	0.6				●				●	●	●	●
	32 W	32 W	0.51	32			0.09	0.6	0.6				●				●	●	●	●
	30 W	30 W	0.55	30			0.09	0.6	0.7				●				●	●	●	●
	28 W	28 W	0.58	28			0.09	0.6	0.7	●	●	●	●	●	●	●	●	●	●	●
	26 W	26 W	0.63	26			0.10	0.7	0.8				●				●	●	●	●
	24 W	24 W	0.68	24			0.11	0.7	0.8				●				●	●	●	●
	22 W	22 W	0.74	22			0.13	0.8	0.9				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	19 W	19 W	0.86	19			0.15	0.8	1.0				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.8	1.0				●				●	●	●	●
	16 W	16 W	1.02	16			0.18	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 W	14 W	1.16	14			0.21	1.0	1.2	●	●	●	●	●	●	●	●	●	●	●
	12 W	12 W	1.36	12			0.25	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11 W	11 W	1.48	11			0.27	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 W	10 W	1.63	10			0.31	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 W	09 W	1.81	9			0.34	1.2	1.5	●	●	●	●	●	●	●	●	●	●	●
	08 W	08 W	2.03	8			0.39	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22ER 07 W	22EL 07 W	2.32	7	12.7	22	0.45	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	(ERM) 06 W	06 W	2.71	6			0.52	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	05 W	05 W	3.25	5			0.65	1.7	2.4	●	●	●	●	●	●	●	●	●	●	●
	27ER 4.5 W	27EL 4.5 W	3.25	4.5	15.875	27	0.73	1.8	2.6				●				●	●	●	●
	(ERM) 4 W	4 W	3.61	4			0.82	2.0	2.9				●				●	●	●	●

Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR 26 W	06IL 26 W	0.63	26	3.97	6	0.10	0.6	0.6				●				●	●	●	●
	22 W	22 W	0.74	22			013	0.6	0.6				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.6	0.7				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.6	0.7				●				●	●	●	●
	08IR 28 W	08IL 28 W	0.58	28	4.76	8	0.09	0.6	0.6				●				●	●	●	●
	24 W	24 W	0.68	24			0.11	0.6	0.6				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.6	0.7				●				●	●	●	●
	19 W	19 W	0.86	19			0.15	0.6	0.7				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.6	0.7				●				●	●	●	●
	16 W	16 W	1.02	16			0.18	0.6	0.7				●				●	●	●	●
	11IR 72 W	11IL 72 W	0.23	72	6.35	11	0.02	0.7	0.4				●				●	●	●	●
	(IRM) 60 W	60 W	0.27	60			0.02	0.7	0.4				●				●	●	●	●
	56 W	56 W	0.29	56			0.02	0.7	0.4				●				●	●	●	●
	48 W	48 W	0.34	48			0.04	0.6	0.6				●				●	●	●	●
	40 W	40 W	0.41	40			0.07	0.6	0.6				●				●	●	●	●
	36 W	36 W	0.45	36			0.09	0.6	0.6				●				●	●	●	●
	32 W	32 W	0.51	32			0.09	0.6	0.6				●				●	●	●	●
	28 W	28 W	0.58	28			0.09	0.6	0.7				●				●	●	●	●
	26 W	26 W	0.63	26			0.10	0.7	0.8				●				●	●	●	●
	24 W	24 W	0.68	24			0.11	0.7	0.8				●				●	●	●	●
	22 W	22 W	0.74	22			0.13	0.8	0.9				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	19 W	19 W	0.86	19			0.15	0.8	1.0				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.8	1.0				●				●	●	●	●
	16 W	16 W	1.02	16			0.18	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 W	14 W	1.16	14			0.21	1.0	1.2	●	●	●	●	●	●	●	●	●	●	●
	12 W	12 W	1.36	12			0.25	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11 W	11 W	1.48	11			0.27	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 W	10 W	1.63	10			0.31	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 W	09 W	1.81	9			0.34	1.2	1.5	●	●	●	●	●	●	●	●	●	●	●
	08 W	08 W	2.03	8			0.39	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	16IR 72 W	16IL 72 W	0.23	72	9.525	16	0.02	0.7	0.4				●				●	●	●	●
	(IRM) 60 W	60 W	0.27	60			0.02	0.7	0.4				●				●	●	●	●
	56 W	56 W	0.29	56			0.02	0.7	0.4	●	●	●	●	●	●	●	●	●	●	●
	48 W	48 W	0.34	48			0.04	0.6	0.6				●				●	●	●	●
	40 W	40 W	0.41	40			0.06	0.6	0.6				●				●	●	●	●
	36 W	36 W	0.45	36			0.09	0.6	0.6				●				●	●	●	●
	32 W	32 W	0.51	32			0.09	0.6	0.6				●				●	●	●	●
	30 W	30 W	0.55	30			0.09	0.6	0.7				●				●	●	●	●
	28 W	28 W	0.58	28			0.09	0.6	0.7	●	●	●	●	●	●	●	●	●	●	●
	26 W	26 W	0.63	26			0.10	0.7	0.8				●				●	●	●	●
	24 W	24 W	0.68	24			0.11	0.7	0.8				●				●	●	●	●
	22 W	22 W	0.74	22			0.13	0.8	0.9				●				●	●	●	●
	20 W	20 W	0.81	20			0.14	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	19 W	19 W	0.86	19			0.15	0.8	1.0				●				●	●	●	●
	18 W	18 W	0.90	18			0.16	0.8	1.0				●				●	●	●	●
	16 W	16 W	1.02	16			0.18	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 W	14 W	1.16	14			0.21	1.0	1.2	●	●	●	●	●	●	●	●	●	●	●
	12 W	12 W	1.36	12			0.25	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11 W	11 W	1.48	11			0.27	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 W	10 W	1.63	10			0.31	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 W	09 W	1.81	9			0.34	1.2	1.5	●	●	●	●	●	●	●	●	●	●	●
	08 W	08 W	2.03	8			0.39	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22IR 07 W	22IL 07 W	2.32	7	12.7	22	0.45	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	(IRM) 06 W	06 W	2.71	6			0.52	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	05 W	05 W	3.25	5			0.65	1.7	2.4	●	●	●	●	●	●	●	●	●	●	●
	27IR 4.5 W	27IL 4.5 W	3.61	4.5	15.875	27	0.73	1.8	2.6				●				●	●	●	●
	(IRM) 4 W	4 W	4.07	4			0.82	2.0	2.9				●				●	●	●	●

TTX32R

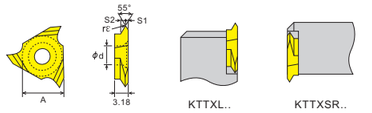
Tool installation style



Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTX32R	5501	-	28-10	0.1	1.1	0.5	9.525	4.4				●	●	●		●	●		
		5502	-	14-10	0.2	1.1	0.5						●	●	●		●	●		

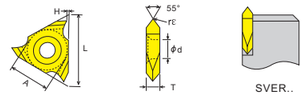
TTX32L

Tool installation style



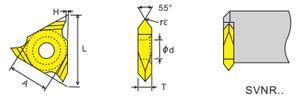
Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTX32L	5501	-	28-10	0.1	1.1	0.5	9.525	4.4				●	●	●		●	●		
		5502	-	14-10	0.2	1.1	0.5						●	●	●		●	●		

VER..



Application	Specification VE[ ]R	Pitch (tpi)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	16VER AG55	48-8	-	0.07	16	3.65	9.525	4.0					●					●	●	
	27VER V55	4-2.5	-	0.88	27	8.7	15.87	6.35					●					●	●	
	4W	4											●					●	●	
	3W	3											●					●	●	
	2.5W	2.5											●					●	●	

VNR..



Application	Specification VN[ ]R	Pitch (tpi)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	16VNR AG55	48-8	-	0.06	16	3.65	9.525	4.0					●					●	●	
	27VNR V55	4-2.5	-	0.89									●					●	●	
	4W	4			27	8.7	15.87	6.35					●					●	●	
	3W	3											●					●	●	
	2.5W	2.5											●					●	●	

TKFT..R..

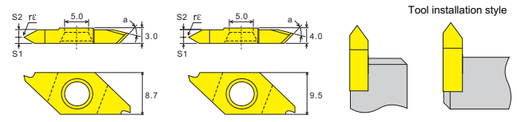
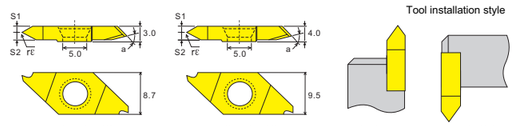


Fig.1 TKFT12R.. Fig.2 TKFT16R..

Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TKFT12R	A55005	-	40-16	0.05	0.8	1.7	55°	1				●	●	●				●	
		B55005	-	40-16	0.05	1.7	0.8						●	●	●				●	
	TKFT16R	A55005	-	40-16	0.05	0.8	1.7	55°	2				●	●	●				●	
		B55005	-	40-16	0.05	1.7	0.8						●	●	●				●	

TKFT..L..



Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TKFT12L	A55005	-	40-16	0.05	1.7	0.8	55°	1				●	●	●				●	
		B55005	-	40-16	0.05	0.8	1.7						●	●	●				●	
	TKFT16L	A55005	-	40-16	0.05	1.7	0.8	55°	2				●	●	●				●	
		B55005	-	40-16	0.05	0.8	1.7						●	●	●				●	

TTP..FR..

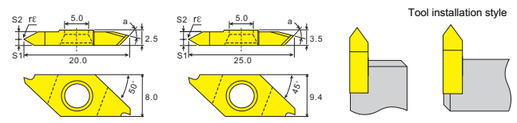


Fig.1 TTP.. Fig.2 TTPA..

Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTP55	FR8A	-	48-16	0.05	0.8	1.7	55°	1				●	●	●				●	
		FR8B	-	48-16	0.05	1.7	0.8						●	●	●				●	
	TTPA55	FR8A	-	48-16	0.05	0.8	1.7	55°	2				●	●	●				●	
		FR8B	-	48-16	0.05	1.7	0.8						●	●	●				●	

TTP..FL..

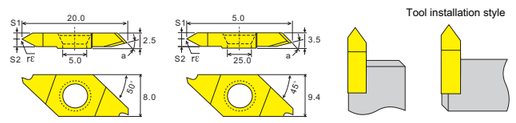


Fig.1 TTP.. Fig.2 TTPA..

Application	Specification		Pitch of Screw (mm)	Pitch of Screw (tpi)	Dimension (mm) rε	S1	S2	a	Fig	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Thread processing	TTP55	FL8A	-	48-16	0.05	1.7	0.8	55°	1				●	●	●				●	
		FL8B	-	48-16	0.05	0.8	1.7						●	●	●				●	
	TTPA55	FL8A	-	48-16	0.05	1.7	0.8	55°	2				●	●	●				●	
		FL8B	-	48-16	0.05	0.8	1.7						●	●	●				●	

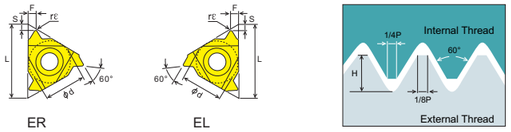
UN,UNJ,PG Thread Turning Insert

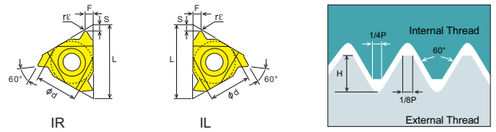
UN

Thread Application: General Industry

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❋	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						✕			✕	◐
H	Titanium/Superalloy/Carbon Fiber	●						✕			✕	◐

● Stable Cutting ◐ General Cutting ✕ Unstable Cutting ◐ General Cutting(Second recommend)





External thread processing

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	11ER 72 UN	11EL 72 UN	0.22	72			0.02	0.8	0.4				●					●	●	●
	(ERM) 64 UN	64 UN	0.24	64			0.02	0.8	0.4				●					●	●	●
	56 UN	56 UN	0.28	56			0.04	0.7	0.4				●					●	●	●
	48 UN	48 UN	0.32	48			0.05	0.6	0.6				●					●	●	●
	44 UN	44 UN	0.35	44			0.05	0.6	0.6				●					●	●	●
	40 UN	40 UN	0.39	40	6.35	11	0.06	0.6	0.6				●					●	●	●
	36 UN	36 UN	0.43	36			0.07	0.6	0.6				●					●	●	●
	32 UN	32 UN	0.49	32			0.09	0.6	0.6				●					●	●	●
	28 UN	28 UN	0.56	28			0.10	0.6	0.7				●					●	●	●
	27 UN	27 UN	0.58	27			0.10	0.7	0.8				●					●	●	●
	24 UN	24 UN	0.65	24			0.12	0.7	0.8				●					●	●	●
	20 UN	20 UN	0.78	20			0.15	0.8	0.9				●					●	●	●
	18 UN	18 UN	0.87	18			0.17	0.8	1.0	●	●	●	●	●	●	●	●	●	●	●
	16 UN	16 UN	0.97	16			0.18	0.9	1.1				●					●	●	●
	14 UN	14 UN	1.11	14			0.22	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	16ER 72 UN	16EL 72 UN	0.22	72			0.02	0.8	0.4				●					●	●	●
	(ERM) 64 UN	64 UN	0.24	64			0.02	0.8	0.4				●					●	●	●
	56 UN	56 UN	0.28	56			0.04	0.7	0.4				●					●	●	●
	48 UN	48 UN	0.32	48			0.05	0.6	0.6				●					●	●	●
	44 UN	44 UN	0.35	44			0.05	0.6	0.6				●					●	●	●
	40 UN	40 UN	0.39	40			0.06	0.6	0.6				●					●	●	●
	36 UN	36 UN	0.43	36			0.07	0.6	0.6				●					●	●	●
	32 UN	32 UN	0.49	32			0.09	0.6	0.6				●					●	●	●
	28 UN	28 UN	0.56	28			0.10	0.6	0.7	●	●	●	●	●	●	●	●	●	●	●
	27 UN	27 UN	0.58	27			0.10	0.7	0.8				●					●	●	●
	24 UN	24 UN	0.65	24	9.525	16	0.12	0.7	0.8	●	●	●	●	●	●	●	●	●	●	●
	20 UN	20 UN	0.78	20			0.15	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	18 UN	18 UN	0.87	18			0.18	0.8	1.0	●	●	●	●	●	●	●	●	●	●	●
	16 UN	16 UN	0.97	16			0.18	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 UN	14 UN	1.11	14			0.22	1.0	1.2	●	●	●	●	●	●	●	●	●	●	●
	13 UN	13 UN	1.20	13			0.24	1.0	1.3				●					●	●	●
	12 UN	12 UN	1.30	12			0.26	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11.5 UN	11.5 UN	1.35	11.5			0.27	1.1	1.5				●					●	●	●
	11 UN	11 UN	1.42	11			0.28	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 UN	10 UN	1.56	10			0.32	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 UN	09 UN	1.73	9			0.36	1.2	1.6	●	●	●	●	●	●	●	●	●	●	●
	08 UN	08 UN	1.95	8			0.41	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22ER 07 UN	22EL 07 UN	2.22	7			0.47	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	(ERM) 06 UN	06 UN	2.60	6	12.7	22	0.56	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	05 UN	05 UN	3.12	5			0.67	1.7	2.5	●	●	●	●	●	●	●	●	●	●	●
	27ER 4.5 UN	27EL 4.5 UN	3.46	4.5	15.875	27	0.75	1.9	2.7				●					●	●	●
	(ERM) 4 UN	4 UN	3.89	4			0.85	2.1	3.0				●					●	●	●

Internal thread processing

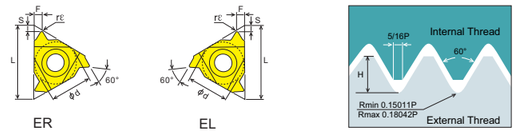
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	06IR 32 UN	06IL 32 UN	0.46	32			0.04	0.5	0.5				●					●	●	●
	28 UN	28 UN	0.52	28			0.04	0.5	0.5				●					●	●	●
	24 UN	24 UN	0.61	24	3.97	6	0.05	0.5	0.6				●					●	●	●
	20 UN	20 UN	0.73	20			0.06	0.6	0.6				●					●	●	●
	18 UN	18 UN	0.81	18			0.07	0.6	1.6				●					●	●	●
	08IR 32 UN	08IL 32 UN	0.46	32			0.04	0.6	0.5				●					●	●	●
	28 UN	28 UN	0.52	28			0.04	0.6	0.6				●					●	●	●
	24 UN	24 UN	0.61	24			0.05	0.6	0.6				●					●	●	●
	20 UN	20 UN	0.73	20	4.76	8	0.06	0.6	0.7				●					●	●	●
	18 UN	18 UN	0.81	18			0.07	0.6	0.7				●					●	●	●
	16 UN	16 UN	0.92	16			0.09	0.6	0.7				●					●	●	●
	14 UN	14 UN	1.05	14			0.10	0.6	0.8				●					●	●	●
	11IR 72 UN	11IL 72 UN	0.20	72			0.02	0.8	0.3				●					●	●	●
	(IRM) 64 UN	64 UN	0.23	64			0.02	0.8	0.4				●					●	●	●
	56 UN	56 UN	0.26	56			0.02	0.7	0.4				●					●	●	●
	48 UN	48 UN	0.31	48			0.03	0.6	0.6				●					●	●	●
	44 UN	44 UN	0.33	44			0.03	0.6	0.6				●					●	●	●
	40 UN	40 UN	0.37	40			0.03	0.6	0.6				●					●	●	●
	36 UN	36 UN	0.41	36			0.04	0.6	0.6				●					●	●	●
	32 UN	32 UN	0.46	32	6.35	11	0.04	0.6	0.6				●					●	●	●
	28 UN	28 UN	0.52	28			0.04	0.6	0.7				●					●	●	●
	27 UN	27 UN	0.54	27			0.04	0.7	0.8				●					●	●	●
	24 UN	24 UN	0.61	24			0.05	0.7	0.8				●					●	●	●
	20 UN	20 UN	0.73	20			0.06	0.8	0.9				●					●	●	●
	18 UN	18 UN	0.81	18			0.07	0.8	1.0	●	●	●	●	●	●	●	●	●	●	●
	16 UN	16 UN	0.92	16			0.09	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 UN	14 UN	1.05	14			0.10	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	13 UN	13 UN	1.13	13			0.11	1.0	1.3				●					●	●	●
	12 UN	12 UN	1.22	12			0.12	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11.5 UN	11.5 UN	1.28	11.5			0.13	1.1	1.5				●					●	●	●
	11 UN	11 UN	1.33	11			0.14	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 UN	10 UN	1.47	10			0.15	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 UN	09 UN	1.63	9			0.17	1.2	1.6	●	●	●	●	●	●	●	●	●	●	●
	08 UN	08 UN	1.83	8			0.19	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	16IR 72 UN	16IL 72 UN	0.20	72			0.02	0.8	0.3				●					●	●	●
	(IRM) 64 UN	64 UN	0.23	64			0.02	0.8	0.4				●					●	●	●
	56 UN	56 UN	0.26	56			0.02	0.7	0.4				●					●	●	●
	48 UN	48 UN	0.31	48			0.03	0.6	0.6				●					●	●	●
	44 UN	44 UN	0.33	44			0.03	0.6	0.6				●					●	●	●
	40 UN	40 UN	0.37	40			0.03	0.6	0.6				●					●	●	●
	36 UN	36 UN	0.41	36			0.04	0.6	0.6				●					●	●	●
	32 UN	32 UN	0.46	32			0.04	0.6	0.6				●					●	●	●
	28 UN	28 UN	0.52	28			0.04	0.6	0.7	●	●	●	●	●	●	●	●	●	●	●
	27 UN	27 UN	0.54	27			0.04	0.7	0.8				●					●	●	●
	24 UN	24 UN	0.61	24	9.525	16	0.05	0.7	0.8	●	●	●	●	●	●	●	●	●	●	●
	20 UN	20 UN	0.73	20			0.06	0.8	0.9	●	●	●	●	●	●	●	●	●	●	●
	18 UN	18 UN	0.81	18			0.07	0.8	1.0	●	●	●	●	●	●	●	●	●	●	●
	16 UN	16 UN	0.92	16			0.09	0.9	1.1	●	●	●	●	●	●	●	●	●	●	●
	14 UN	14 UN	1.05	14			0.10	0.9	1.2	●	●	●	●	●	●	●	●	●	●	●
	13 UN	13 UN	1.13	13			0.11	1.0	1.3				●					●	●	●
	12 UN	12 UN	1.22	12			0.12	1.1	1.4	●	●	●	●	●	●	●	●	●	●	●
	11.5 UN	11.5 UN	1.28	11.5			0.13	1.1	1.5				●					●	●	●
	11 UN	11 UN	1.33	11			0.14	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	10 UN	10 UN	1.47	10			0.15	1.1	1.5	●	●	●	●	●	●	●	●	●	●	●
	09 UN	09 UN	1.63	9			0.17	1.2	1.6	●	●	●	●	●	●	●	●	●	●	●
	08 UN	08 UN	1.83	8			0.19	1.2	1.7	●	●	●	●	●	●	●	●	●	●	●
	22IR 07 UN	22IL 07 UN	2.09	7			0.22	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	(IRM) 06 UN	06 UN	2.44	6	12.7	22	0.26	1.6	2.3	●	●	●	●	●	●	●	●	●	●	●
	05 UN	05 UN	2.93	5			0.32	1.7	2.3	●	●	●	●	●	●	●	●	●	●	●
	27IR 4.5 UN	27IL 4.5 UN	3.26	4.5	15.875	27	0.36	1.9	2.4				●					●	●	●
	(IRM) 4 UN	4 UN	3.67	4			0.41	2.1	2.7				●					●	●	●

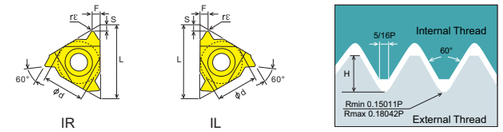
UNJ

Thread Application: Threads for aviation industry

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❋	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						✕			✕	◐
H	Titanium/Superalloy/Carbon Fiber	●						✕			✕	◐

● Stable Cutting ◐ General Cutting ✕ Unstable Cutting ◐ General Cutting(Second recommend)





External thread processing

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	11ER 48 UNJ	11EL 48 UNJ	0.31	48			0.08	0.6	0.5				●					●	●	●
	44 UNJ	44 UNJ	0.33	44			0.09	0.6	0.6				●					●	●	●
	40 UNJ	40 UNJ	0.37	40			0.10	0.6	0.6				●					●	●	●
	36 UNJ	36 UNJ	0.41	36			0.11	0.6	0.6				●					●	●	●
	32 UNJ	32 UNJ	0.46	32			0.12	0.6	0.7				●					●	●	●
	28 UNJ	28 UNJ	0.52	28	6.35	11	0.14	0.7	0.7				●					●	●	●
	24 UNJ	24 UNJ	0.61	24			0.17	0.7	0.8				●					●	●	●
	20 UNJ	20 UNJ	0.73	20			0.20	0.8	0.9				●					●	●	●
	18 UNJ	18 UNJ	0.81	18			0.22	0.8	1.0				●					●	●	●
	16 UNJ	16 UNJ	0.92	16			0.26	0.9	1.1				●					●	●	●
	14 UNJ	14 UNJ	1.05	14			0.29	1.0	1.2				●					●	●	●
	16ER 48 UNJ	16EL 48 UNJ	0.31	48			0.08	0.6	0.5				●					●	●	●
	44 UNJ	44 UNJ	0.33	44			0.09	0.6	0.6				●					●	●	●
	40 UNJ	40 UNJ	0.37	40			0.10	0.6	0.6				●					●	●	●
	36 UNJ	36 UNJ	0.41	36			0.11	0.6	0.6				●					●	●	●
	32 UNJ	32 UNJ	0.46	32			0.12	0.6	0.7				●					●	●	●
	28 UNJ	28 UNJ	0.52	28			0.14	0.7	0.7				●					●	●	●
	24 UNJ	24 UNJ	0.61	24			0.17	0.7	0.8				●					●	●	●
	20 UNJ	20 UNJ	0.73	20	9.525	16	0.20	0.8	0.9				●					●	●	●
	18 UNJ	18 UNJ	0.81	18			0.22	0.8	1.0				●					●	●	●
	16 UNJ	16 UNJ	0.92	16			0.26	0.9	1.1				●					●	●	●
	14 UNJ	14 UNJ	1.05	14			0.29	1.0	1.2				●					●	●	●
	13 UNJ	13 UNJ	1.13	13			0.31	1.0	1.3				●					●	●	●
	12 UNJ	12 UNJ	1.22	12			0.34	1.1	1.3				●					●	●	●
	11 UNJ	11 UNJ	1.33	11			0.36	1.2	1.5				●					●	●	●
	10 UNJ	10 UNJ	1.47	10			0.41	1.2	1.5				●					●	●	●
	09 UNJ	09 UNJ	1.63	9			0.44	1.2	1.6				●					●	●	●
	08 UNJ	08 UNJ	1.83	8			0.51	1.3	1.7				●					●	●	●
	22ER 07 UNJ	22EL 07 UNJ	2.09	7			0.57	1.7	2.3				●					●	●	●
	06 UNJ	06 UNJ	2.44	6	12.7	22	0.66	1.7	2.3				●					●	●	●
	05 UNJ	05 UNJ	2.93	5			0.77	1.8	2.5				●					●	●	●
	27ER 4.5 UNJ	27EL 4.5 UNJ	3.26	4.5	15.87	27	0.85	2.0	2.7				●					●	●	●
	4 UNJ	4 UNJ	3.67	4			0.95	2.2	3.0				●					●	●	●

Internal thread processing

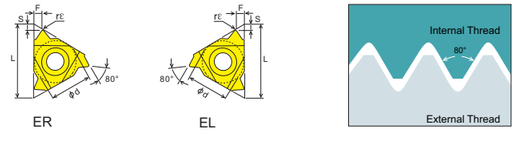
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	11IR 48 UNJ	11IL 48 UNJ	0.28	48			0.03	0.6	0.5				●					●	●	●
	44 UNJ	44 UNJ	0.30	44			0.03	0.6	0.6				●					●	●	●
	40 UNJ	40 UNJ	0.33	40			0.03	0.6	0.6				●					●	●	●
	36 UNJ	36 UNJ	0.37	36			0.04	0.6	0.6				●					●	●	●
	32 UNJ	32 UNJ	0.42	32			0.04	0.6	0.7				●					●	●	●
	28 UNJ	28 UNJ	0.47	28	6.35	11	0.04	0.7	0.7				●					●	●	●
	24 UNJ	24 UNJ	0.55	24			0.05	0.7	0.8				●					●	●	●
	20 UNJ	20 UNJ	0.66	20			0.06	0.8	0.9				●					●	●	●
	18 UNJ	18 UNJ	0.74	18			0.07	0.8	1.0				●					●	●	●
	16 UNJ	16 UNJ	0.83	16			0.09	0.9	1.1				●					●	●	●
	14 UNJ	14 UNJ	0.95	14			0.10	1.0	1.2				●					●	●	●
	16IR 48 UNJ	16IL 48 UNJ	0.28	48			0.03	0.6	0.5				●					●	●	●
	44 UNJ	44 UNJ	0.30	44			0.03	0.6	0.6				●					●	●	●
	40 UNJ	40 UNJ	0.33	40			0.03	0.6	0.6				●					●	●	●
	36 UNJ	36 UNJ	0.37	36			0.04	0.6	0.6				●					●	●	●
	32 UNJ	32 UNJ	0.42	32			0.04	0.6	0.7				●					●	●	●
	28 UNJ	28 UNJ	0.47	28			0.04	0.7	0.7				●					●	●	●
	24 UNJ	24 UNJ	0.55	24			0.05	0.7	0.8				●					●	●	●
	20 UNJ	20 UNJ	0.66	20	9.525	16	0.06	0.8	0.9				●					●	●	●
	18 UNJ	18 UNJ	0.74	18			0.07	0.8	1.0				●					●	●	●
	16 UNJ	16 UNJ	0.83	16			0.09	0.9	1.1				●					●	●	●
	14 UNJ	14 UNJ	0.95	14			0.10	1.0	1.2				●					●	●	●
	13 UNJ	13 UNJ	1.02	13			0.11	1.0	1.3				●					●	●	●
	12 UNJ	12 UNJ	1.11	12			0.12	1.1	1.3				●					●	●	●
	11 UNJ	11 UNJ	1.21	11			0.12	1.2	1.5				●					●	●	●
	10 UNJ	10 UNJ	1.33	10			0.15	1.2	1.5				●					●	●	●
	09 UNJ	09 UNJ	1.48	9			0.17	1.2	1.6				●					●	●	●
	08 UNJ	08 UNJ	1.66	8			0.19	1.3	1.7				●					●	●	●
	22IR 07 UNJ	22IL 07 UNJ	1.90	7			0.22	1.7	2.3				●					●	●	●
	06 UNJ	06 UNJ	2.21	6	12.7	22	0.26	1.7	2.3				●					●	●	●
	05 UNJ	05 UNJ	2.66	5			0.32	1.8	2.5				●					●	●	●
	27IR 4.5 UNJ	27IL 4.5 UNJ	2.95	4.5	15.87	27	0.36	2.0	2.7				●					●	●	●
	4 UNJ	4 UNJ	3.32	4			0.41	2.2	3.0				●					●	●	●

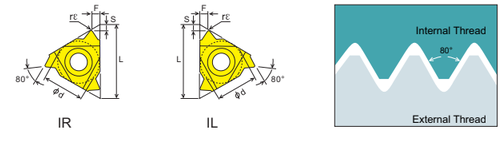
PG

Thread Application: Conduit thread

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❋	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						✕			✕	◐
H	Titanium/Superalloy/Carbon Fiber	●						✕			✕	◐

● Stable Cutting ◐ General Cutting ✕ Unstable Cutting ◐ General Cutting(Second recommend)





External thread processing

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	T	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	11ER 20 PG	11EL 20 PG		20					0.9				●					●	●	
	18 PG	18 PG		18	6.35	11		3.18	1.0				●					●	●	
	16 PG	16 PG		16					1.1				●					●	●	
	16ER 20 PG	16EL 20 PG		20					0.9				●					●	●	
	18 PG	18 PG		18	9.525	16		3.65	1.0				●					●	●	
	16PG	16PG		16					1.1				●					●	●	

Internal thread processing

Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	11IR 20 PG	11IL 20 PG		20					0.9				●					●	●	
	18 PG	18 PG		18	6.35	11		3.18	1.0				●					●	●	
	16 PG	16 PG		16					1.1				●					●	●	
	16IR 20 PG	16IL 20 PG		20					0.9				●					●	●	
	18 PG	18 PG		18	9.525	16		3.65	1.0				●					●	●	
	16PG	16PG		16					1.1				●					●	●	

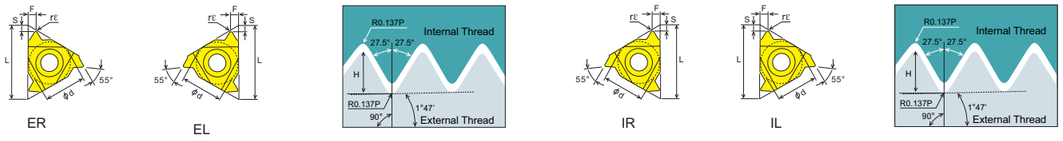
BSPT/RND/NPT/NPTF
Thread Turning Insert

BSPT

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

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❀	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	○	○	○	○	○	○
S	Carbide/Powder Metallurgy	●						✕			◐	
H	Titanium/Superalloy/Carbon Fiber	●						✕			◐	

Stable Cutting ● / General Cutting ◐ / General Cutting(Second recommend) ○ / Unstable Cutting ✕



Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 28BSPT	11EL 28BSPT	0.58	28	6.35	11		0.11	0.6	0.6				●				●	●	●
	(ERM) 19BSPT	19BSPT	0.86	19				0.16	0.8	0.9				●				●	●	●
	14BSPT	14BSPT	1.16	14				0.21	0.9	1.0				●				●	●	●
	16ER 28BSPT	16EL 28BSPT	0.58	28	9.525	16		0.11	0.6	0.6	●	●	●		●	●	●	●	●	●
	(ERM) 19BSPT	19BSPT	0.86	19				0.16	0.8	0.9	●	●	●		●	●	●	●	●	●
	14BSPT	14BSPT	1.16	14				0.21	1.0	1.2	●	●	●		●	●	●	●	●	●
	11BSPT	11BSPT	1.48	11				0.28	1.1	1.5	●	●	●		●	●	●	●	●	●

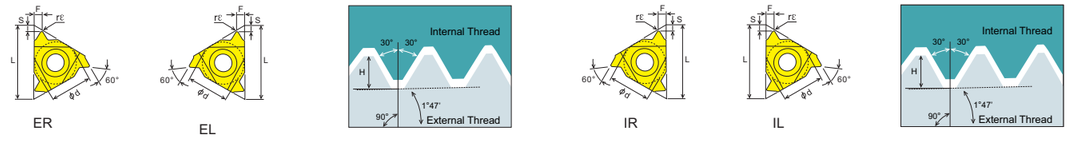
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR 28BSPT	06IL 28BSPT	0.58	28	3.97	6	0.11	0.7	0.6				●				●	●	●	●
	08IR 28BSPT	08IL 28BSPT	0.58	28	4.76	8	0.11	0.6	0.6				●				●	●	●	●
	19BSPT	19BSPT	0.86	19			0.16	0.6	0.6				●				●	●	●	●
	11IR 28BSPT	11IL 28BSPT	0.58	28	6.35	11	0.11	0.6	0.6				●				●	●	●	●
	(IRM) 19BSPT	19BSPT	0.86	19			0.16	0.8	0.9				●				●	●	●	●
	14BSPT	14BSPT	1.16	14			0.21	0.9	1.0				●				●	●	●	●
	16IR 28BSPT	16IL 28BSPT	0.58	28	9.525	16	0.11	0.6	0.6	●	●	●		●	●	●	●	●	●	●
	(IRM) 19BSPT	19BSPT	0.86	19			0.16	0.8	0.9	●	●	●		●	●	●	●	●	●	●
	14BSPT	14BSPT	1.16	14			0.21	1.0	1.2	●	●	●		●	●	●	●	●	●	●
	11BSPT	11BSPT	1.48	11			0.28	1.1	1.5	●	●	●		●	●	●	●	●	●	●

NPT

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

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❀	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	○	○	○	○	○	○	○
S	Carbide/Powder Metallurgy	●						✕			◐	
H	Titanium/Superalloy/Carbon Fiber	●						✕			◐	

Stable Cutting ● / General Cutting ◐ / General Cutting(Second recommend) ○ / Unstable Cutting ✕



Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 27 NPT	11EL 27 NPT	0.66	27	6.35	11	0.04	0.7	0.8				●				●	●	●	●
	(ERM) 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				●				●	●	●	●
	16ER 27 NPT	16EL 27 NPT	0.66	27	9.525	16	0.04	0.7	0.8				●		●	●	●	●	●	●
	(ERM) 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				●		●	●	●	●	●	●
	11.5 NPT	11.5 NPT	1.64	11.5			0.09	1.1	1.5				●		●	●	●	●	●	●
	08 NPT	08 NPT	2.42	8			0.12	1.3	1.8				●		●	●	●	●	●	●

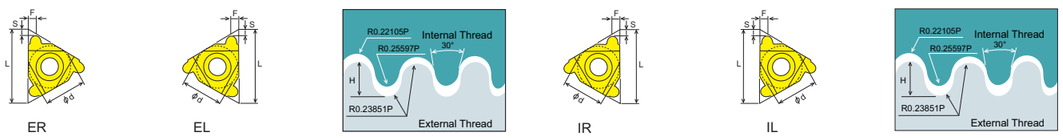
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR 27 NPT	06IL 27 NPT	0.66	27	3.97	6	0.04	0.6	0.6				●				●	●	●	●
	08IR 27 NPT	08IL 27 NPT	0.66	27	4.76	8	0.04	0.6	0.6				●				●	●	●	●
	18 NPT	18 NPT	1.01	18			0.06	0.6	0.6				●				●	●	●	●
	11IR 27 NPT	11IL 27 NPT	0.66	27	6.35	11	0.04	0.7	0.8				●				●	●	●	●
	(IRM) 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				●				●	●	●	●
	16IR 27 NPT	16IL 27 NPT	0.66	27	9.525	16	0.04	0.7	0.8				●		●	●	●	●	●	●
	(IRM) 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				●		●	●	●	●	●	●
	11.5 NPT	11.5 NPT	1.64	11.5			0.09	1.1	1.5				●		●	●	●	●	●	●
	08 NPT	08 NPT	2.42	8			0.12	1.3	1.8				●		●	●	●	●	●	●

RND

Thread Application: For Fireproof pipe fittings and food industry

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❀	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	○	○	○	○	○	○	○
S	Carbide/Powder Metallurgy	●						✕			◐	
H	Titanium/Superalloy/Carbon Fiber	●						✕			◐	

Stable Cutting ● / General Cutting ◐ / General Cutting(Second recommend) ○ / Unstable Cutting ✕



Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
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				●	●		●	●	●	●	●
	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					●		●	●	●	●	●

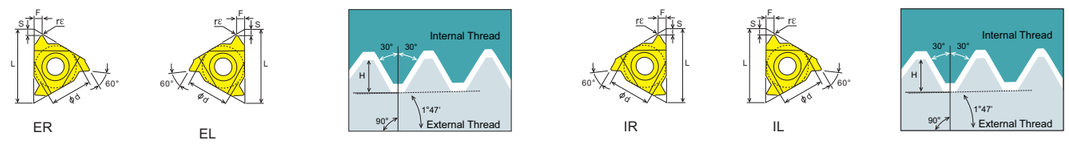
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	16IR 10 RND	16IL 10 RND	1.27	10	9.525	16		1.1	1.2				●		●	●	●	●	●	●
	8 RND	8 RND	1.59	8				1.4	1.3				●		●	●	●	●	●	●
	6 RND	6 RND	2.12	6				1.5	1.7				●		●	●	●	●	●	●
	22IR 6 RND	22IL 6 RND	2.12	6	12.7	22		1.5	1.7				●		●	●	●	●	●	●
	4 RND	4 RND	3.18	4				2.2	2.3				●		●	●	●	●	●	●
	27IR 4 RND	27IL 4 RND	3.18	4	15.87	27		2.2	2.3				●		●	●	●	●	●	●

NPTF

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

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	✕	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	❀	◐	◐	◐
K	Iron	●		◐		◐		✕	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●			◐	○	○	○	○	○	○	○
S	Carbide/Powder Metallurgy	●						✕			◐	
H	Titanium/Superalloy/Carbon Fiber	●						✕			◐	

Stable Cutting ● / General Cutting ◐ / General Cutting(Second recommend) ○ / Unstable Cutting ✕



Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 27 NPTF	11EL 27 NPTF	0.64	27	6.35	11	0.04	0.7	0.8				●				●	●	●	●
	(ERM) 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				●				●	●	●	●
	16ER 27 NPTF	16EL 27 NPTF	0.64	27	9.525	16	0.04	0.7	0.8				●		●	●	●	●	●	●
	(ERM) 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				●		●	●	●	●	●	●
	11.5 NPTF	11.5 NPTF	1.63	11.5			0.04	1.1	1.5				●		●	●	●	●	●	●
	08 NPTF	08 NPTF	2.38	8			0.04	1.3	1.8				●		●	●	●	●	●	●

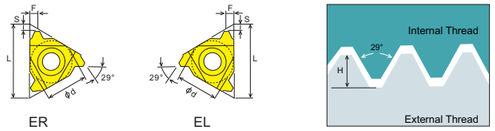
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	06IR 27 NPTF	06IL 27 NPTF	0.64	27	3.97	6	0.04	0.7	0.6				●				●	●	●	●
	08IR 27 NPTF	08IL 27 NPTF	0.64	27	4.76	8	0.04	0.6	0.6				●				●	●	●	●
	18 NPTF	18 NPTF	1.00	18			0.04	0.6	0.6				●				●	●	●	●
	11IR 27 NPTF	11IL 27 NPTF	0.64	27	6.35	11	0.04	0.7	0.7				●				●	●	●	●
	(IRM) 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				●				●	●	●	●
	16IR 27 NPTF	16IL 27 NPTF	0.64	27	9.525	16	0.04	0.7	0.7				●		●	●	●	●	●	●
	(IRM) 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				●		●	●	●	●	●	●
	11.5 NPTF	11.5 NPTF	1.63	11.5			0.04	1.1	1.5				●		●	●	●	●	●	●
	08 NPTF	08 NPTF	2.38	8			0.04	1.3	1.8				●		●	●	●	●	●	●

ACME Thread Turning Insert
TR Thread Turning Insert

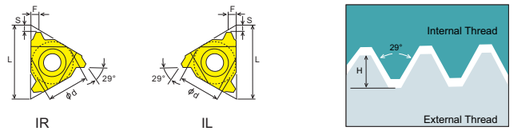
ACME

Material	Cutting Environment	● Stable Cutting	◐ General Cutting	◔ General Cutting(Second recommend)	✕ Unstable Cutting	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel			●	◔			●	◔	●	✕	◔	◔	◔	◔	◔
M	Stainless Steel			◔				◔		●	✱	✱	◔	◔	◔	◔
K	Iron	●		◔			●		◔		✕	◔	◔	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●						◐	◔	◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●									✕			✕		◔
H	Titanium/Superalloy/Carbon Fiber	●									✕			✕		◔

Thread Application: Trapezoidal thread for power transmission



ER EL

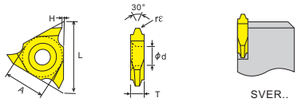


IR IL

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 16 ACME	11EL 16 ACME	0.92	16	6.35	11		1.0	1.1				●				●	●		
	16ER 16 ACME	16EL 16 ACME	0.92	16	9.525	16		1.0	1.1				●				●	●		
	(ERM) 14 ACME	14 ACME	1.03	14				1.0	1.2				●				●	●		
	12 ACME	12 ACME	1.19	12				1.1	1.2				●				●	●		
	10 ACME	10 ACME	1.52	10				1.3	1.4				●				●	●		
	8 ACME	8 ACME	1.84	8				1.4	1.5				●				●	●		
	6 ACME	6 ACME	2.37	6				1.7	1.9				●				●	●		
	22ER 6 ACME	22EL 6 ACME	2.37	6	12.7	22		1.8	2.1				●				●	●		
	(ERM) 5 ACME	5 ACME	2.79	5				2.0	2.3				●				●	●		
	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				●				●	●		

Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	11IR 16 ACME	11IL 16 ACME	0.92	16	6.35	11		0.9	0.9				●				●	●		
	16IR 16 ACME	16IL 16 ACME	0.92	16	9.525	16		1.0	1.1				●				●	●		
	(IRM) 14 ACME	14 ACME	1.03	14				1.1	1.2				●				●	●		
	12 ACME	12 ACME	1.19	12				1.2	1.3				●				●	●		
	10 ACME	10 ACME	1.52	10				1.3	1.4				●				●	●		
	8 ACME	8 ACME	1.84	8				1.4	1.5				●				●	●		
	6 ACME	6 ACME	2.37	6				1.7	1.9				●				●	●		
	22IR 6 ACME	22IL 6 ACME	2.37	6	12.7	22		1.8	2.1				●				●	●		
	(IRM) 5 ACME	5 ACME	2.79	5				2.0	2.3				●				●	●		
	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				●				●	●		

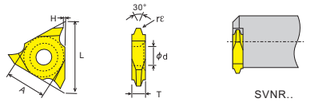
VER..



SVER..

Application	Specification VE[ ]R	Pitch (tpi)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	22VER 6ACME	6		0.2	22	4.9	12.7	5.1				●				●	●		
	5ACME	5		0.25								●				●	●		
	4ACME	4		0.3								●				●	●		
	27VER 3.5ACME	3.5		0.3	27	8.7	15.87	6.35				●				●	●		
	3ACME	3		0.3								●				●	●		

VNR..



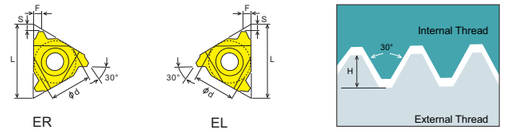
SVNR..

Application	Specification VN[ ]R	Pitch (tpi)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	22VNR 6ACME	6		0.2	22	4.9	12.7	5.1				●				●	●		
	5ACME	5		0.25								●				●	●		
	4ACME	4		0.3								●				●	●		
	27VNR 3.5ACME	3.5		0.3	27	8.7	15.87	6.35				●				●	●		
	3ACME	3		0.3								●				●	●		

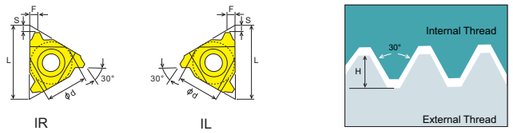
TR

Material	Cutting Environment	● Stable Cutting	◐ General Cutting	◔ General Cutting(Second recommend)	✕ Unstable Cutting	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel			●	◔			●	◔	●	✕	◔	◔	◔	◔	◔
M	Stainless Steel			◔				◔		●	✱	✱	◔	◔	◔	◔
K	Iron	●		◔			●		◔		✕	◔	◔	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●						◐	◔	◔	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●									✕			✕		◔
H	Titanium/Superalloy/Carbon Fiber	●									✕			✕		◔

Thread Application: Trapezoidal thread for power transmission



ER EL

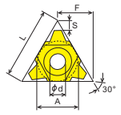


IR IL

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 1.5 TR	11EL 1.5 T43	0.90	1.5	6.35	11		0.8	0.9				●				●	●	●	
	16ER 1.5 TR	16EL 1.5 T43	0.90	1.5	9.525	16		1.0	1.1				●				●	●	●	
	(ERM) 2.0 TR	2.0 T43	1.25	2.0				1.1	1.3				●				●	●	●	
	3.0 TR	3.0 T43	1.75	3.0				1.3	1.5				●				●	●	●	
	22ER 4.0 TR	22EL 4.0 T43	2.25	4.0	12.7	22		1.7	1.9				●				●	●	●	
	(ERM) 5.0 TR	5.0 T43	2.75	5.0				2.1	2.5				●				●	●	●	
	6.0 TR	6.0 T43	3.50	6.0				2.3	2.7				●				●	●	●	
	27ER 6.0 TR	27EL 6.0 T43	3.50	6.0	15.87	27		2.3	2.7				●				●	●	●	
	7.0 TR	7.0 T43	4.00	7.0				2.2	2.6				●				●	●	●	

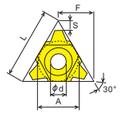
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	11IR 1.5 TR	11IL 1.5 T43	0.90	1.5	6.35	11		0.8	0.9				●				●	●	●	
	16IR 1.5 TR	16IL 1.5 T43	0.90	1.5	9.525	16		1.0	1.1				●				●	●	●	
	(IRM) 2.0 TR	2.0 T43	1.25	2.0				1.1	1.3				●				●	●	●	
	3.0 TR	3.0 T43	1.75	3.0				1.3	1.5				●				●	●	●	
	22IR 4.0 TR	22IL 4.0 T43	2.25	4.0	12.7	22		1.7	1.9				●				●	●	●	
	(IRM) 5.0 TR	5.0 T43	2.75	5.0				2.1	2.5				●				●	●	●	
	6.0 TR	6.0 T43	3.50	6.0				2.3	2.7				●				●	●	●	
	27IR 6.0 TR	27IL 6.0 T43	3.50	6.0	15.87	27		2.3	2.7				●				●	●	●	
	7.0 TR	7.0 T43	4.00	7.0				2.2	2.6				●				●	●	●	

UER..



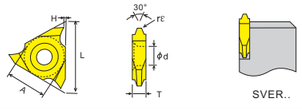
Application	Specification [ ]U	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	A	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	22UER 6.0 TR	3.50	6.0	5.1	22	12.7	2.0	11.0				●				●	●		
	7.0 TR	4.00	7.0	5.1	22	12.7	2.3	11.0				●				●	●		
	27UER 8.0 TR	4.57	8.0	6.35	27	15.87	2.6	13.7				●				●	●		
	9.0 TR		9.0	6.35	27	15.87	3.0	13.7				●				●	●		
	10.0 TR		10.0	6.35	27	15.87		13.7				●				●	●		

UIR..



Application	Specification [ ]U	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	A	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	22UIR 6.0 TR	3.50	6.0	5.1	22	12.7	2.0	11.0				●				●	●		
	7.0 TR	4.00	7.0	5.1	22	12.7	2.3	11.0				●				●	●		
	27UIR 8.0 TR	4.57	8.0	6.35	27	15.87	2.6	13.7				●				●	●		
	9.0 TR		9.0	6.35	27	15.87	3.0	13.7				●				●	●		
	10.0 TR		10.0	6.35	27	15.87		13.7				●				●	●		

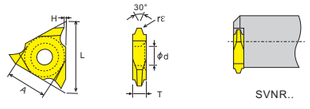
VER..



SVER..

Application	Specification VE[ ]R	Pitch (mm)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	22VER 4.0 TR	4.0		0.1	22	4.9	12.7	5.1				●				●	●		
	5.0 TR	5.0		0.1								●				●	●		
	6.0 TR	6.0		0.25								●				●	●		
	27VER 6.0 TR	6.0		0.25	27	8.7	15.87	6.35				●				●	●		
	7.0 TR	7.0		0.25								●				●	●		
	8.0 TR	8.0		0.25								●				●	●		
	9.0 TR	9.0		0.25								●				●	●		
	10.0 TR	10.0		0.3								●				●	●		
	12.0 TR	12.0		0.5								●				●	●		

VNR..

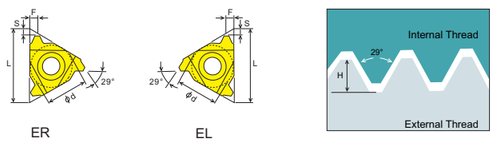


SVNR..

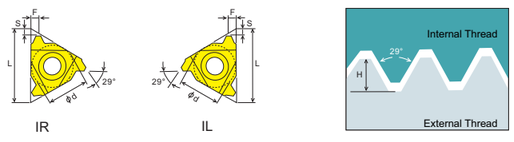
Application	Specification VN[ ]R	Pitch (mm)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	22VNR 4.0 TR	4.0		0.1	22	4.9	12.7	5.1				●				●	●		
	5.0 TR	5.0		0.1								●				●	●		
	6.0 TR	6.0		0.25								●				●	●		
	27VNR 6.0 TR	6.0		0.25	27	8.7	15.87	6.35				●				●	●		
	7.0 TR	7.0		0.25								●				●	●		
	8.0 TR	8.0		0.25								●				●	●		
	9.0 TR	9.0		0.25								●				●	●		
	10.0 TR	10.0		0.3								●				●	●		
	12.0 TR	12.0		0.5								●				●	●		

STUB ACME

Thread Application: Acme improved control valve forming thread



ER EL



IR IL

Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 16 STACME	11EL 16 STACME	0.60	16	6.35	11		1.0	1.0				●				●	●		
	16ER 16 STACME	16EL 16 STACME	0.60	16	9.525	16		1.0	1.0				●				●	●		
	(ERM) 14 STACME	14 STACME	0.67	14				1.1	1.1				●				●	●		
	12 STACME	12 STACME	0.76	12				1.2	1.2				●				●	●		
	10 STACME	10 STACME	1.02	10				1.2	1.3				●				●	●		
	8 STACME	8 STACME	1.21	8				1.4	1.5				●				●	●		
	6 STACME	6 STACME	1.52	6				1.7	1.8				●				●	●		
	22ER 6 STACME	22EL 6 STACME	1.52	6	12.7	22		1.7	1.8				●				●	●		
	(ERM) 5 STACME	5 STACME	1.78	5				2.1	2.3				●				●	●		
	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				●				●	●		

Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	NΩ21	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	11IR 16 STACME	11IL 16 STACME	0.60	16	6.35	11		1.0	1.0				●				●	●		
	16IR 16 STACME	16IL 16 STACME	0.60	16	9.525	16		1.0	1.0				●				●	●		
	(IRM) 14 STACME	14 STACME	0.67	14				1.1	1.1				●				●	●		
	12 STACME	12 STACME	0.76	12				1.2	1.2				●				●	●		
	10 STACME	10 STACME	1.02	10				1.2	1.3				●				●	●		
	8 STACME	8 STACME	1.21	8				1.4	1.5				●				●	●		
	6 STACME	6 STACME	1.52	6				1.7	1.8				●				●	●		
	22IR 6 STACME	22IL 6 STACME	1.52	6	12.7	22		1.7	1.8				●				●	●		
	(IRM) 5 STACME	5 STACME	1.78	5				2.1	2.3				●				●	●		
	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				●				●	●		

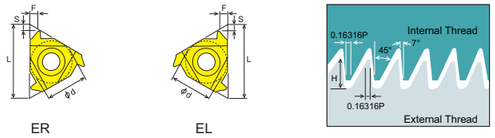
ABUT,BBUT,SAGE
Thread Turning Insert

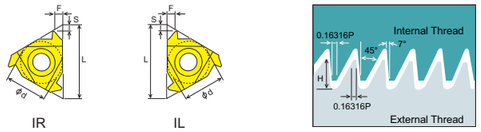
ABUT

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	×	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	✱	◐	◐	◐
K	Iron	●		◐		◐		×	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						×				◐
H	Titanium/Superalloy/Carbon Fiber	●						×				◐

● Stable Cutting ◐ General Cutting ◐ General Cutting(Second recommend) × Unstable Cutting

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





Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	11ER 20 ABUT	11EL 20 ABUT	0.84	20	6.35	11		1.0	1.4				●				●	●		●
	16 ABUT	16 ABUT	1.05	16				1.3	1.9				●				●	●		●
	16ER 20 ABUT	16EL 20 ABUT	0.84	20	9.525	16		1.0	1.4				●				●	●		●
	16 ABUT	16 ABUT	1.05	16				1.3	1.9				●				●	●		●
	12 ABUT	12 ABUT	1.40	12				1.4	2.0				●				●	●		●
	10 ABUT	10 ABUT	1.68	10				1.5	2.3				●				●	●		●
	22ER 8 ABUT	22EL 8 ABUT	2.10	8	12.7	22		2.0	3.2				●				●	●		●
	6 ABUT	6 ABUT	2.80	6				2.2	3.5				●				●	●		●

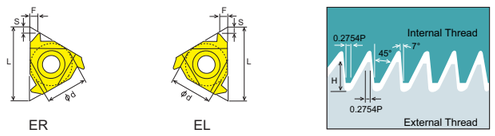
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	11IR 20 ABUT	11IL 20 ABUT	0.84	20	6.35	11		1.0	1.4				●				●	●		●
	16 ABUT	16 ABUT	1.05	16				1.3	1.9				●				●	●		●
	16IR 20 ABUT	16IL 20 ABUT	0.84	20	9.525	16		1.0	1.4				●				●	●		●
	16 ABUT	16 ABUT	1.05	16				1.3	1.9				●				●	●		●
	12 ABUT	12 ABUT	1.40	12				1.4	2.0				●				●	●		●
	10 ABUT	10 ABUT	1.68	10				1.5	2.3				●				●	●		●
	22IR 8 ABUT	22IL 8 ABUT	2.10	8	12.7	22		2.0	3.2				●				●	●		●
	6 ABUT	6 ABUT	2.80	6				2.2	3.5				●				●	●		●

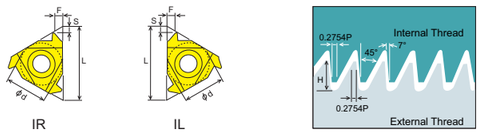
BBUT

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◐		◐	●	×	◐	◐	◐	◐
M	Stainless Steel				◐		◐	◐	✱	◐	◐	◐
K	Iron	●		◐		◐		×	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						×				◐
H	Titanium/Superalloy/Carbon Fiber	●						×				◐

● Stable Cutting ◐ General Cutting ◐ General Cutting(Second recommend) × Unstable Cutting

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





Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	16ER 16 BBUT	16EL 16 BBUT	0.80	16	9.525	16		1.1	1.6				●				●	●		●
	12 BBUT	12 BBUT	1.07	12				1.4	2.1				●				●	●		●
	10 BBUT	10 BBUT	1.28	10				1.4	2.2				●				●	●		●
	8 BBUT	8 BBUT	1.61	8				1.6	2.5				●				●	●		●
	22ER 8 BBUT	22EL 8 BBUT	1.61	8	12.7	22		1.6	2.5				●				●	●		●

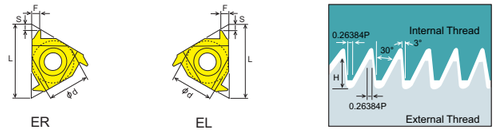
Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal thread processing	16IR 16 BBUT	16IL 16 BBUT	0.80	16	9.525	16		1.1	1.6				●				●	●		●
	12 BBUT	12 BBUT	1.07	12				1.4	2.1				●				●	●		●
	10 BBUT	10 BBUT	1.28	10				1.4	2.2				●				●	●		●
	8 BBUT	8 BBUT	1.61	8				1.6	2.5				●				●	●		●
	22IR 8 BBUT	22IL 8 BBUT	1.61	8	12.7	22		1.6	2.5				●				●	●		●

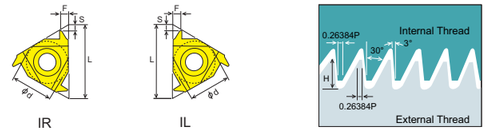
SAGE

Material	Cutting Environment	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel			●	◐	◐	●	×	◐	◐	◐	◐
M	Stainless Steel				◐	◐	◐	◐	✱	◐	◐	◐
K	Iron		●		◐		◐	×	◐	◐	◐	◐
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◐	◐	◐	◐	◐	◐
S	Carbide/Powder Metallurgy	●						×				◐
H	Titanium/Superalloy/Carbon Fiber	●						×				◐

● Stable Cutting ◐ General Cutting ◐ General Cutting(Second recommend) × Unstable Cutting

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



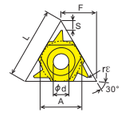


Application	Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
External thread processing	16ER 2.0 SAGE	16EL 2.0 SAGE	1.74	2.0	9.525	16		1.47	2.08				●				●	●		
	22ER 2.0 SAGE	22EL 2.0 SAGE	1.74	2.0	12.7	22		1.47	2.08				●				●	●		
	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				●				●	●		

Application	Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
Internal 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				●				●	●		
	4.0 SAGE	4.0 SAGE	3.09	4.0				2.12	3.2				●				●	●		

UER..

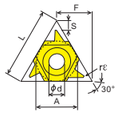
External thread processing



Application	Specification [ ]U	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	A	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22UER 5.0 SAGE		5.0	5.1	22	0.62	12.7	11.0				●				●	●		
	6.0 SAGE		6.0			0.75						●				●	●		

UIR..

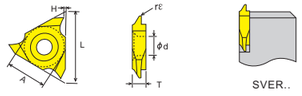
Internal thread processing



Application	Specification [ ]U	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	rε	A	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22UIR 5.0 SAGE		5.0	5.1	22	0.62	12.7	11.0				●				●	●		
	6.0 SAGE		6.0			0.75						●				●	●		

VER..

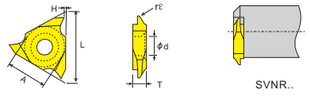
External thread processing



Application	Specification VE[ ]R	Pitch (mm)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	27VER 8.0 SAGE	8.0		0.8	27	8.7	15.87	6.35					●				●	●	

VNR..

Internal thread processing



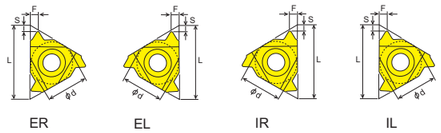
Application	Specification VN[ ]R	Pitch (mm)	Dimension (mm) H	rε	L	T	A	ϕd	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	27VNR 8.0 SAGE	8.0		0.2	27	8.7	15.87	6.35				●				●	●		

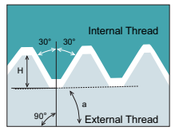
API,BUT,EL Thread Turning Insert

API

Thread Application: Petroleum and natural gas industries - screw threads for shoulder connections

Material	Cutting Environment (● Stable Cutting; ◐ General Cutting; ◔ General Cutting(Second recommend); ✖ Unstable Cutting)	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◔			◔	●	✖	◔	◔	◔
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔
K	Iron	●			◔		◔		✖	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●							✖			◔
H	Titanium/Superalloy/Carbon Fiber	●							✖			◔





Inserts	Applicable specification of threaded pipe
4API382	N23~NC50
4API383	NC56~NC77
4API502	6-5/8"REG,5-1/2"FH,6-5/8"FH
4API503	5-1/2",7-5/8",8-5/8"REG
5API403	2-3/8"~4-1/2"REG,3-1/2"FH,4-1/2"FH
6API551	NC10~NC16

Application: External thread processing

Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22ER 4API382	22EL 4API382	3.09	4	12.7	22	2°	2.1	2.8						●			●	●	
4API383	4API383	3.08	4			3°	2.1	2.8						●			●	●	
4API502	4API502	3.75	4			2°	2.0	2.9						●			●	●	
4API503	4API503	3.74	4			3°	2.0	2.9						●			●	●	
5API403	5API403	2.99	5			3°	1.8	2.6						●			●	●	
6API551	6API551	1.41	6			1°	2.6	2.0						●			●	●	
27ER 4API382	27EL 4API382	3.09	4	15.87	27	2°	2.1	2.8						●			●	●	
4API383	4API383	3.08	4			3°	2.1	2.8						●			●	●	
4API502	4API502	3.75	4			2°	2.1	3.1						●			●	●	
4API503	4API503	3.74	4			3°	2.1	3.1						●			●	●	
5API403	5API403	2.99	5			3°	1.9	2.7						●			●	●	

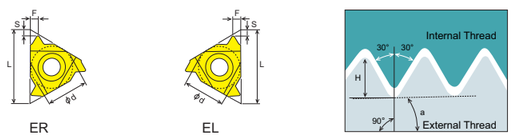
Application: Internal thread processing

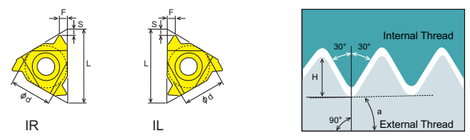
Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22IR 4API382	22IL 4API382	3.09	4	12.7	22	2°	2.1	2.8						●			●	●	
4API383	4API383	3.08	4			3°	2.1	2.8						●			●	●	
4API502	4API502	3.75	4			2°	2.1	3.1						●			●	●	
4API503	4API503	3.74	4			3°	2.0	2.9						●			●	●	
5API403	5API403	2.99	5			3°	1.8	2.6						●			●	●	
6API551	6API551	1.41	6			1°	2.6	2.0						●			●	●	
27IR 4API382	27IL 4API382	3.09	4	15.87	27	2°	2.1	2.8						●			●	●	
4API383	4API383	3.08	4			3°	2.1	2.8						●			●	●	
4API502	4API502	3.75	4			2°	2.1	3.1						●			●	●	
4API503	4API503	3.74	4			3°	2.1	3.1						●			●	●	
5API403	5API403	2.99	5			3°	1.9	2.7						●			●	●	

API RD

Thread Application: Threads for petroleum and natural gas industries

Material	Cutting Environment (● Stable Cutting; ◐ General Cutting; ◔ General Cutting(Second recommend); ✖ Unstable Cutting)	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◔			◔	●	✖	◔	◔	◔
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔
K	Iron	●			◔		◔		✖	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●							✖			◔
H	Titanium/Superalloy/Carbon Fiber	●							✖			◔





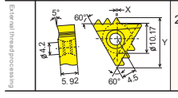
Application: External thread processing

Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
16ER 10APIRD	16EL 10APIRD	1.41	10	9.525	16	1.47°	1.2	1.4						●			●	●	
8APIRD	8APIRD	1.81	8				1.3	1.5						●			●	●	

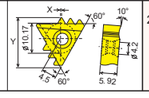
Application: Internal thread processing

Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (tpi)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
16IR 10APIRD	16IL 10APIRD	1.41	10	9.525	16	1.47°	1.2	1.4						●			●	●	
8APIRD	8APIRD	1.81	8				1.3	1.5						●			●	●	

Application: External thread processing

Dimensioning	Specification	Pitch (tpi)	Dimension (mm) Number of teeth	a	X	Y	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22ER 10APIRD-4	10	4	1.47°	0.18	17.1						●			●	●	
	8APIRD-3	8	3		0.32	17.1						●			●	●	

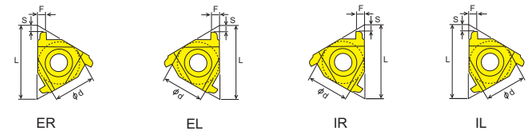
Application: Internal thread processing

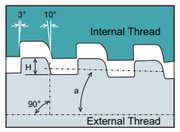
Dimensioning	Specification	Pitch (tpi)	Dimension (mm) Number of teeth	a	X	Y	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22IR 10APIRD-4	10	4	1.47°	0.18	17.1						●			●	●	
	8APIRD-3	8	3		0.32	17.1						●			●	●	

BUT

Thread Application: Thread for petroleum trapezoidal casing

Material	Cutting Environment (● Stable Cutting; ◐ General Cutting; ◔ General Cutting(Second recommend); ✖ Unstable Cutting)	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◔			◔	●	✖	◔	◔	◔
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔
K	Iron	●			◔		◔		✖	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●							✖			◔
H	Titanium/Superalloy/Carbon Fiber	●							✖			◔





Inserts	Applicable specification of threaded pipe
5BUT75	4-1/2"~13-3/8"
5BUT1	16"~20"

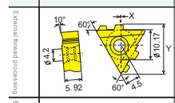
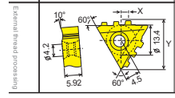
Application: External thread processing

Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22ER 5BUT75	22EL 5BUT75	1.55	5.0	12.7	22	0.75°	3.1	1.9						●			●	●	
5BUT1	5BUT1	1.55	5.0			1°	3.1	1.9						●			●	●	

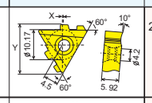
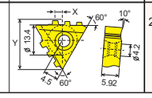
Application: Internal thread processing

Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22IR 5BUT75	22IL 5BUT75	1.55	5.0	12.7	22	0.75°	2.8	1.9						●			●	●	
5BUT1	5BUT1	1.55	5.0			1°	2.8	1.9						●			●	●	

Application: External thread processing

Dimensioning	Specification	Pitch (tpi)	Dimension (mm) a	X	Y	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22ER 5BUT75-2	5	2	0.75°	2.05	16.8						●			●	●
	27ER 5BUT75-3	5	3	0.75°	2.46	21.9						●			●	●

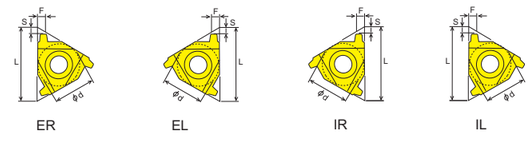
Application: Internal thread processing

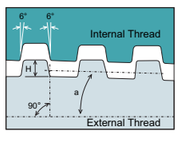
Dimensioning	Specification	Pitch (tpi)	Dimension (mm) a	X	Y	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
	22IR 5BUT75-2	5	2	0.75°	1.14	16.65						●			●	●
	27IR 5BUT75-3	5	3	0.75°	2.46	21.9						●			●	●

EL

Thread Application: Thread for linear casing

Material	Cutting Environment (● Stable Cutting; ◐ General Cutting; ◔ General Cutting(Second recommend); ✖ Unstable Cutting)	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
P	Steel		●	◔			◔	●	✖	◔	◔	◔
M	Stainless Steel				◔		◔	◔	✱	◔	◔	◔
K	Iron	●			◔		◔		✖	◔	◔	◔
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐	◔	◔	◔	◔	◔	◔
S	Carbide/Powder Metallurgy	●							✖			◔
H	Titanium/Superalloy/Carbon Fiber	●							✖			◔





Inserts	Applicable specification of threaded pipe
6EL15	5"~7-5/8"
5EL125	8-5/8"~10-3/4"

Application: External thread processing

Specification E[ ]R	Specification E[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22ER 6EL15	22EL 6EL15	1.21	6.0	12.7	22	1.5°	1.9	1.9						●			●	●	
5EL125	5EL125	1.71	5.0			1.25°	2.3	2.4						●			●	●	

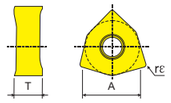
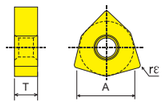
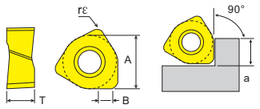
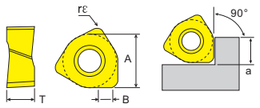
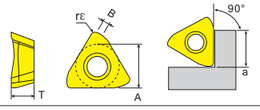
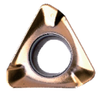
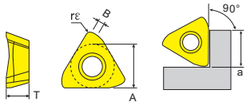
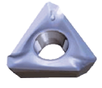
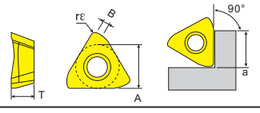
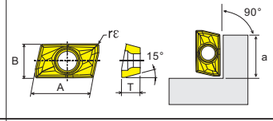
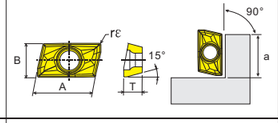
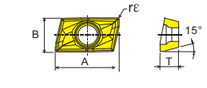
Application: Internal thread processing

Specification I[ ]R	Specification I[ ]L	Depth Hmin	Pitch (mm)	Dimension (mm) ϕd	L	a	S	F	PCD1	CBN1	CBN2	PM30	N021	PMK25	PMK26	PMS35	PMK27	PMK30	PMS31
22IR 6EL15	22IL 6EL15	1.39	6.0	12.7	22	1.5°	1.8	1.9						●			●	●	
5EL125	5EL125	1.91	5.0			1.25°	2.2	2.4						●			●	●	

CNC Milling Inserts
CNC Cutting Tools

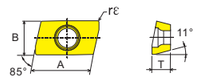
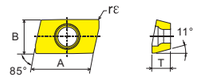
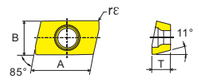
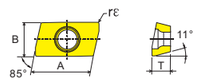
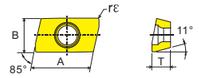
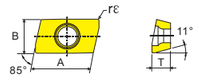
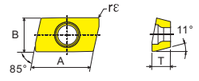
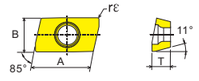
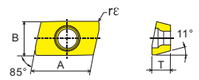
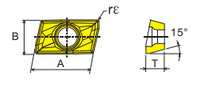
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	P2201	PMS35	PMS40	PMS30	PMS15
P	Steel		●	◐			◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	P2201	PMS35	PMS40	PMS30	PMS15
Right-Angle Milling			WNMU 0404	0.8	6.35	-	4.76							●	●	●	●	●			
Right-Angle Milling			WNMU 080604EN-T24 080608EN-T24 080608EN-G12 080608EN-M35	0.4 0.8 0.8 0.8	14.02 14.02 14.02 14.02	- - - -	6.65 6.65 6.65 6.65							●	●	●	●	●			
Right-Angle Milling			6NGU 060404R-G12 060405R-G12 060408R-G12 060410R-G12 060416R-G12	0.4 0.5 0.8 1.0 1.6	9.26 9.26 9.26 9.26 9.26	2.36 2.36 1.96 1.76 1.16	4.76 4.76 4.76 4.76 4.76	- - - - -	6.2 6.2 6.2 6.2 6.2					● ● ● ● ●	●● ●● ●● ●● ●●							
Right-Angle Milling			6NGU 090504R-G12 090508R-G12 090516R-G12	0.4 0.8 1.6	13.05 13.05 13.05	2.2 2.0 1.2	6.74 6.74 6.74	- - -	9.2 9.2 9.2					● ● ●	● ● ●							
Right-Angle Milling			3PKT 100404R-G12 100408R-G12 150508R-G12 190608R-G12 190616R-G12	0.4 0.5 0.8 1.0 1.6	6.9 6.9 10.7 13.5 13.5	1.3 0.9 1.6 2.0 1.2	4 4 5 6 6	- - - - -	7 7 11 15 15					● ● ● ● ●	●● ●● ●● ●● ●●							
Right-Angle Milling			3PKT 100404R-M23 150508R-M23 190608R-M23	6.9 10.7 13.5	6.9 10.7 13.5	0.9 1.6 2.0	4 5 6	- - -	7 11 15					● ● ●	●● ●● ●●							
Right-Angle Milling	 Special for Aluminum		3PHT 100404R-T11 100408R-T11 150508R-T11 190608R-T11	6.9 6.9 10.7 13.5	6.9 6.9 10.7 13.5	1.3 0.9 1.6 2.0	4 4 5 6	- - - -	7 7 11 15						● ● ● ●							
Right-Angle Milling			JDMT 100304R 100308R 100320R 100332R 150504R 150508R 150520R 150530R	0.4 0.8 2.0 3.2 0.4 0.8 2.0 3.0	11.0 11.0 11.0 11.0 16.0 16.0 16.0 16.0	6.1 6.1 6.1 6.1 9.12 9.12 9.12 9.12	3.5 3.5 3.5 3.5 5.0 5.0 5.0 5.0	- - - - - - - -	10 10 10 10 15 15 15 15		●●● ●●● ●●● ●●● ●●● ●●● ●●● ●●●					●●● ●●●						
Right-Angle Milling			JDMT 070202R 070204R 070208R EDMT 070220R-G14 070220R	0.2 0.4 0.8 2.0 2.0	6.4 6.4 6.4 6.4 6.4	4.3 4.3 4.3 4.3 4.3	2.45 2.45 2.45 2.5 2.5		6 6 6 6 6		●●● ●●● ●●● ●●● ●●●					●●● ●●● ●●●						
Right-Angle Milling			APKT 1003PDR-M24 1003PDTR-M26 1003PDTR-M25 100308PDTR-M25 100310PDR-M25 100312TR-M25 100316PDTR-M25 100320PDTR-M25	0.5 0.5 0.5 0.8 1.0 1.2 1.6 2.0	10.95 11.00 11.00 11.00 10.75 10.50 10.90 10.90	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7	3.55 3.47 3.47 3.47 3.47 3.47 3.47 3.47				●●● ●●● ●●● ●●● ●●● ●●● ●●● ●●●	●				●● ●●		●				

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

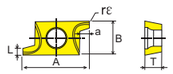
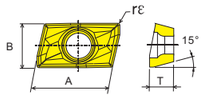
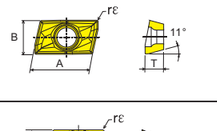
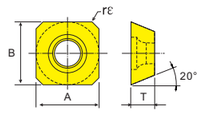
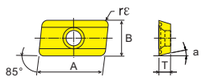
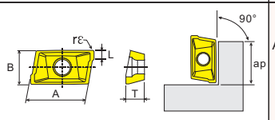
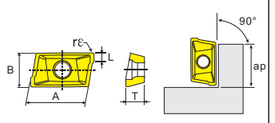
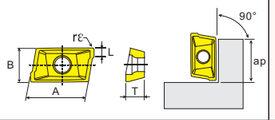
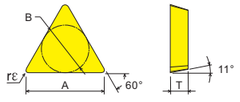
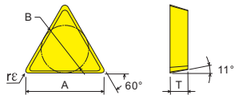
		PCD1	CBN1	CBN2	PM30	N021	P141	P2201	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◐		◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Right-Angle Milling	 Special for copper aluminum metal		APKT 1135PDER-M10 1604PDER-M10	0.8 0.8	11 16.5	6.35 9.525	3.5 4.76							● ●							
Right-Angle Milling	 Special for copper aluminum metal		APKT 160402-T11 160404-T11 160408-T11	0.2 0.4 0.8	16.5 16.5 16.5	9.525 9.525 9.525	4.76 4.76 4.76							● ● ●							
Right-Angle Milling	 Special for copper aluminum metal		APKT 113502 113504 113508 160402 160404 160408	0.2 0.4 0.8 0.2 0.4 0.8	11 11 11 16.5 16.5 16.5	6.35 6.35 6.35 9.525 9.525 9.525	3.5 3.5 3.5 4.76 4.76 4.76				● ● ● ● ● ●										
Right-Angle Milling	 Cast iron and hard to cut materials		APKT 113502 113504 113508 160402 160404 160408	0.2 0.4 0.8 0.2 0.4 0.8	11 11 11 16.5 16.5 16.5	6.35 6.35 6.35 9.525 9.525 9.525	3.5 3.5 3.5 4.76 4.76 4.76					●● ●● ●● ●● ●● ●●										
Right-Angle Milling	 General processing		APMT 1135PDER-M12 1604PDER-M12	0.8 0.8	11 16.5	6.35 9.525	3.5 4.76							● ●				●●●● ●●●●			
Right-Angle Milling	 General processing		APMT 1135PDER-M13 1135PDER-M14 1135PDER-M15 1135PDER-M16 1135PDER-M17 1604PDER-M13 1604PDER-M14 1604PDER-M15 1604PDER-M16 1604PDER-M17 1604PDER-M18	0.4 0.8 1.2 1.6 2.4 0.4 0.8 1.2 1.6 2.4 3.2	11 11 11 11 11 16.5 16.5 16.5 16.5 16.5 16.5	6.35 6.35 6.35 6.35 6.35 9.525 9.525 9.525 9.525 9.525 9.525	3.5 3.5 3.5 3.5 3.5 4.76 4.76 4.76 4.76 4.76 4.76						● ● ● ● ● ● ● ● ● ● ●					● ●●●● ● ● ● ● ●●●● ● ● ● ●			
Right-Angle Milling	 General processing		APMT 1135PDER-M19 1604PDER-M19	0.8 0.8	11 16.5	6.35 9.525	3.5 4.76							● ●				●●●●●● ●●●●●●			
Right-Angle Milling	 General processing		APMT 1135PDER-M20 1604PDER-M20	0.8 0.8	11 16.5	6.35 9.525	3.5 4.76											●●●● ●●●●			
Right-Angle Milling	 General processing		APMT 1135PDER-M21 1604PDER-M21	0.8 0.8	11 16.5	6.35 9.525	3.5 4.76											●●● ●●●			
Right-Angle Milling			R390- 11T304M-T18 11T308M-T18 11T316M-T18 11T331M-T18 170404M-T18 170408M-T18 170416M-T18 170431M-T18	0.4 0.8 1.6 3.1 0.4 0.8 1.6 3.1	10 10 10 10 15.7 15.7 15.7 15.7	6.8 6.8 6.8 6.8 9.6 9.6 9.6 9.6	3.59 3.59 3.59 3.59 4.76 4.76 4.76 4.76							●●●● ●●●● ●●● ●●● ●●●● ●●●● ●●● ●●●		●● ●●		●●● ●●●			

CNC Milling Inserts
CNC Cutting Tools

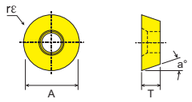
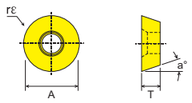
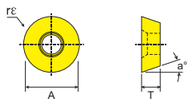
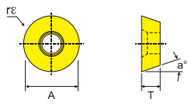
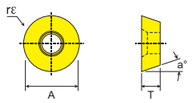
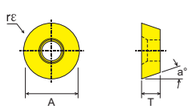
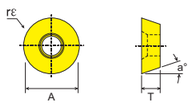
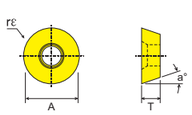
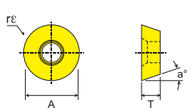
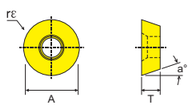
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel		●	◐			◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Right-Angle Milling			RT 070204R-M27	0.4	6.4	4.3	2.38	1.3	1.5		●	●	●			●		●	●		
			100304R-M27	0.4	11	6.35	3.4	1.8	2.1		●	●	●			●		●	●		
			100304R-M22	0.4	11	6.35	3.4	1.8	2.1		●	●	●			●		●	●		
			100308R-M27	0.8	11	6.35	3.4	1.8	2.1		●	●	●			●		●	●		
Right-Angle Milling			XOMX 060208FR-M28	0.8	6.94	4.09	2.45											●	●		
			060208R-M29	0.8	6.94	4.09	2.45											●	●		
			090308FR-M31	0.8	10.8	6.35	3.65											●	●		
			120408TR-M30	0.8	11.41	8.18	4.15											●	●		
Right-Angle Milling			AOMT 123602PEER-G12	0.2	12	6.6	3.6												●		
			123604PEER-G12	0.4															●		
			123608PEER-G12	0.8															●		
			123612PEER-G12	1.2															●		
			123616PEER-G12	1.6																	
			123620PEER-G12	2.0																	
			123624PEER-G12	2.4																	
			123632PEER-G12	3.2																	
Right-Angle Milling			SEET 09T308PER-T14	0.8	9.525	9.525	4.01											●	●		
			09T308PER-T18	0.8	9.525	9.525	4.01											●	●		
			09T308PER-T29	0.8	9.525	9.525	4.01											●	●		
			SEET 120308PER-T14	0.8	13.308	13.308	4.04											●	●		
			120308PER-T18	0.8	13.308	13.308	4.04											●	●		
			120308PER-T29	0.8	13.308	13.308	4.04											●	●		
Right-Angle Milling			APET 120202 M63	0.2	12.7	7.938	2.5		11°												
			120204 M63	0.4	12.7	7.938	2.5		11°												
			120208 M63	0.8	12.7	7.938	2.5		11°												
			APNT 120208 M63	0.8	12.7	7.938	2.5		11°												
			ADET 160302 M63	0.2	15.875	9.525	3.18		15°												
			160304 M63	0.4	15.875	9.525	3.18		15°												
			160308 M63	0.8	15.875	9.525	3.18		15°												
			ADNT 160308 M63	0.8	15.875	9.525	3.18		15°												
Right-Angle Milling			AXMT 0602PER-M33	0.2	6	4.15	2.6	1.0	5.75									●	●	●	
			060204R-M33	0.4	6	4.15	2.6	1.0	5.75									●	●	●	
			060208R-M33	0.8	6	4.15	2.6	1.0	5.75									●	●	●	
			060216R-M33	1.6	6	4.15	2.6	1.0	5.75									●	●	●	
Right-Angle Milling			AXMT 0903PER-M23	0.4	9.5	6.21	3.6	1.4	8.8									●	●	●	
			0903PER-M34	0.4	9.5	6.21	3.6	0.84	8.8									●	●	●	
			090308R-M34	0.8	9.5	6.21	3.6	-	8.8									●	●	●	
			090316R-M23	1.6	9.5	6.21	3.6	-	8.8									●	●	●	
			090320R-M34	2.0	9.5	6.21	3.6	-	8.8									●	●	●	
			090332R-M34	3.2	9.5	6.21	3.6	-	8.8									●	●	●	
Right-Angle Milling	Special for Aluminum		AXCT 060202R-T11	0.2	6	4.15	2.6	0.83	5.75				●								
			060204R-T11	0.4	6	4.15	2.6	0.83	5.75				●								
			0903PER-T11	0.4	9.5	6.21	3.6	0.83	8.8				●								
Pauschalfräsen / Chamfering			TPKN 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						●		●	●	●	●	●	●	
			220404	0.4	22	12.7	4.76						●		●	●	●	●	●	●	
			220408	0.8	22	12.7	4.76						●		●	●	●	●	●	●	
			220412	1.2	22	12.7	4.76						●		●	●	●	●	●	●	
			2204-M62	-	22	12.7	4.76						●		●	●	●	●	●	●	
Pauschalfräsen / Chamfering			TPMR 090204	0.4	9.6	5.56	2.38														
			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														

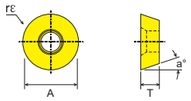
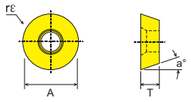
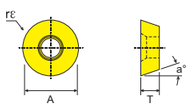
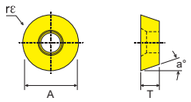
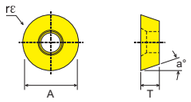
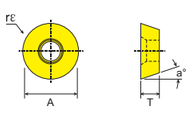
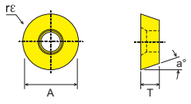
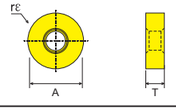
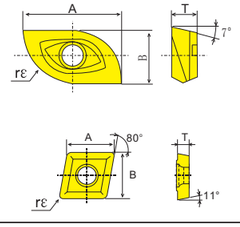
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel		●	◐			◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Fillet milling			RPGT 08T2-T11	4	8			2.78	11°					●							
			1003-T11	5	10			3.15	11°					●							
			10T3-T11	5	10			3.97	11°					●							
			1204-T11	6	12			4.76	11°					●							
Fillet milling			RPEW 0802MO	4	8			2.38	11°				●		●	●	●	●	●	●	
			1003MO	5	10			3.15	11°				●		●		●	●	●	●	
			1003MO-M19	5	10			3.97	11°				●		●	●	●	●	●	●	
			1204MOF	6	12			4.76	11°				●		●		●	●	●	●	
Fillet milling			RPKT 10T3MOF	5	10			3.97	11°									●	●	●	●
			1204MOF	6	12			4.76	11°									●	●	●	●
Fillet milling			RPKT 10T3MOT	5	10			3.97	11°									●	●	●	●
			1204MOT	6	12			4.76	11°									●	●	●	●
Fillet milling			RPMT 08T2MOE-M36	4	8			2.78	11°					●		●	●	●	●	●	
			1003MOE-M36	5	10			3.18	11°					●		●	●	●	●	●	
			10T3MOE-M36	5	10			3.97	11°					●		●	●	●	●	●	
			1204MOE-M36	6	12			4.76	11°					●		●	●	●	●	●	
Fillet milling			RPMT 10T3MO-M19	5	10			3.97	11°									●	●	●	●
			1204MO-M19	6	12			4.76	11°									●	●	●	●
Fillet milling			RPMT 08T2MO-M35	4	8			2.78	11°									●	●	●	●
			10T3MO-M35	5	10			3.97	11°									●	●	●	●
			1204MO-M35	6	12			4.76	11°									●	●	●	●
Fillet milling			RCGT 0602-T11	3	6			2.38	7°				●								
			0803-T11	4	8			3.15	7°				●								
			1003-T11	5	10			3.15	7°				●								
			10T3-T11	5	10			3.97	7°				●								
			1204-T11	6	12			4.76	7°				●								
Fillet milling			RCKT 10T3MO-T18	5	10			3.97	7°									●	●	●	●
			1204MO-T18	6	12			4.76	7°									●	●	●	●
			1606MO-T18	8	16			6.35	7°									●	●	●	●
			2006MO-T18	10	20			6.35	7°									●	●	●	●
Fillet milling			RCKT 10T3MO-T29	5	10			3.97	7°									●	●	●	●
			1204MO-T29	6	12			4.76	7°									●	●	●	●
			1606MO-T29	8	16			6.35	7°									●	●	●	●
			2006MO-T29	10	20			6.35	7°									●	●	●	●

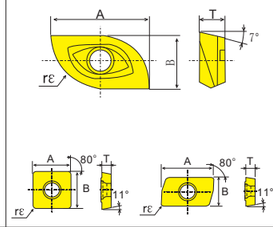
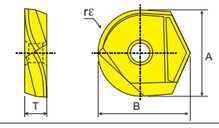
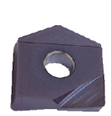
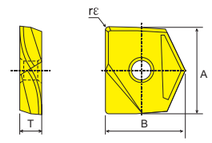
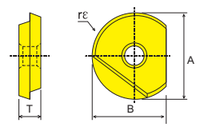
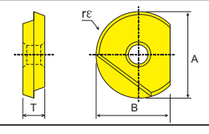
Cutting Environment: ● Stable Cutting ◒ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel		●	◒			◒	✕	✕	✕	◒	●
M	Stainless Steel				◒		◒	✱	✱	✱	◒	◒
K	Iron		●		◒		◒	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◒						
S	Carbide/Powder Metallurgy	●							✕	✕	◒	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◒	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Fillet milling			RCMT 0803MO	4	8			3.18	7°						●		●	●			
			1003MO	5	10			3.18	7°						●		●	●			
			10T3MO	5	10			3.97	7°						●		●	●			
			1204MO	6	12			4.76	7°						●		●	●			
			1606MO	8	16			6.35	7°						●		●	●			
			2006MO	10	20			6.35	7°						●		●	●			
Fillet milling			RCMX 0803MO	4	8			3.18	7°						●		●	●			
			1003MO	5	10			3.18	7°						●		●	●			
			10T3MO	5	10			3.97	7°						●		●	●			
			1204MO	6	12			4.76	7°						●		●	●			
			1606MO	8	16			6.35	7°						●		●	●			
			2006MO	10	20			6.35	7°						●		●	●			
			2507MO	12.5	25			7.94	7°						●		●	●			
			3209MO	16	32			9.52	7°						●		●	●			
Fillet milling			RDKW 0501MO	2.5	5			1.59	15°						●		●	●			
			0702MO	3.5	7			2.38	15°						●		●	●			
			0803MO	4	8			3.15	15°						●		●	●			
			10T3MO	5	10			3.97	15°						●		●	●			
			1204MO	6	12			4.76	15°						●		●	●			
			1604MO	8	16			4.76	15°						●		●	●			
			1605MO	8	16			5.56	15°						●		●	●			
			1606MO	8	16			6.35	15°						●		●	●			
			2006MO	10	20			6.35	15°						●		●	●			
Fillet milling			RDKX 10T3MO	5	10			3.97	15°						●		●	●			
			1204MO	6	12			4.76	15°						●		●	●			
			1605MO	8	16			6.35	15°						●		●	●			
				10	20			6.35	15°						●		●	●			
Fillet milling			RDKX 10T3MP-1	5	10			3.97	15°						●			●			
			1204MP-1	6	12			4.76	15°						●			●			
Fillet milling			RDMW 10T3MOT-T18	5	10			3.97	15°						●	●	●	●			
			1204MOT-T18	6	12			4.76	15°						●	●	●	●			
			1605MOT-T18	8	16			5.56	15°						●	●	●	●			
Fillet milling			RDMT 10T3MO	5	10			3.97	15°						●	●	●	●			
			1204MO	6	12			4.76	15°						●	●	●	●			
Surface milling			RNGJ 1204M0ELD	6	12			4.75							●	●	●	●			
			1204M0SGD												●	●	●	●			
			1204M0SHD												●	●	●	●			
Roughing milling of hard head positing			ZCET 080CE 主刃	8	15.6	7.9	3.97								●	●	●	●			
			ZCET 100CE	10	18.3	10	4.74								●	●	●	●			
			ZCEW 100CE	10	18.3	10	4.74								●	●	●	●			
			ZCET 125CE	12.5	23.1	12.3	6.1								●	●	●	●			
			ZCEW 125CE	12.5	23.1	12.3	6.1								●	●	●	●			
			ZCET 150CE	15	28.3	14.9	7.59								●	●	●	●			
			ZCEW 150CE	15	28.3	14.9	7.59								●	●	●	●			
			ZCET 160CE	16	28.8	15.4	7.45								●	●	●	●			
			ZCEW 200CE	20	35.4	20.1	8.0								●	●	●	●			
			ZCET 080SE 副刃	8	16.8	5.9	3.43								●	●	●	●			
			ZCET 100SE	10	16.7	8.1	4.24								●	●	●	●			
			ZCEW 100SE	10	16.7	8.1	4.24								●	●	●	●			
			ZCET 125SE	12.5	20.8	9.3	5.4								●	●	●	●			
			ZCEW 125SE	12.5	20.8	9.3	5.4								●	●	●	●			
			ZCET 150SE	15	25.7	11.8	7.09								●	●	●	●			
			ZCEW 150SE	15	25.7	11.8	7.09								●	●	●	●			
			ZCET 160SE	16	26.3	12.4	6.96								●	●	●	●			
			ZCEW 200SE	20	31.9	15.7	7.0								●	●	●	●			
			CPMT 080204 外周刃	0.4	7.94	7.94	2.38								●	●	●	●			
			CPMT 090308	0.8	9.525	9.525	3.18								●	●	●	●			

Cutting Environment: ● Stable Cutting ◒ General Cutting ✕ Unstable Cutting

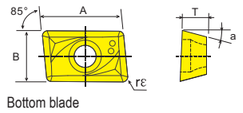
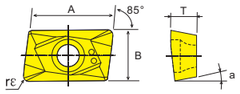
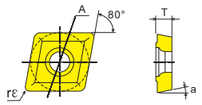
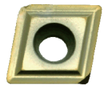
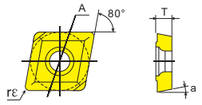
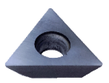
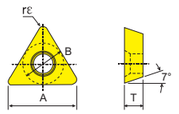
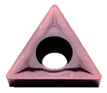
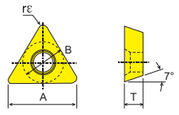
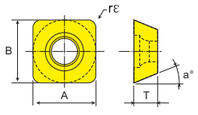
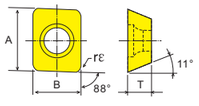
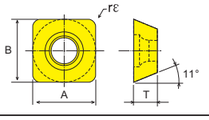
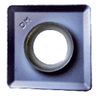
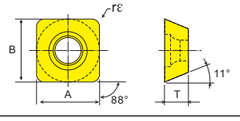
		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel		●	◒			◒	✕	✕	✕	◒	●
M	Stainless Steel				◒		◒	✱	✱	✱	◒	◒
K	Iron		●		◒		◒	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◒						
S	Carbide/Powder Metallurgy	●							✕	✕	◒	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◒	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Rough milling of hard head positing			SWB 216-M24	8	15	7.9	3												●	●	
			220-M24	10	15.8	9.9	3.65												●	●	
			225-M24	12.5	18.5	12.4	3.8												●	●	
			230-M24	15	22.2	14.8	5.35												●	●	
			232-M24	16	26	16	5.35												●	●	
			240-M24	20	30.4	20.8	6.85												●	●	
			250-M24	25	34.4	25.7	7												●	●	
			216-T22	8	16.1	6.6	3												●	●	
			220-T22	10	20	8.2	3.65												●	●	
			225-T22	12.5	23.8	10.5	3.8												●	●	
			230-T22	15	27.5	12.3	5.35												●	●	
			232-T22	16	31.7	13.9	5.35												●	●	
			240-T22	20	37.5	16.3	6.85												●	●	
			250-T22	25	42.6	20.8	7												●	●	
			SPGA 090304	0.4	9.525	9.525	3.18												●	●	
			SPMA 090304	0.4	9.525	9.525	3.18												●	●	
			IM-SP 32-GS	0.8	9.525	9.525	3.18												●	●	
			ZCMT 100308R	0.8	10.4	6.35	3.4												●	●	
			ZPMT 100308-M65	0.8	10	6	3.2												●	●	
Finishing of hard head positing			ZPFG 080	4	8	9.7	2.1				●	●	●	●	●	●	●	●	●	●	●
			100	5	10	12.1	2.7				●	●	●	●	●	●	●	●	●	●	●
			120	6	12	14.6	3.2				●	●	●	●	●	●	●	●	●	●	●
			160	8	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			200	10	20	20.3	5.2				●	●	●	●	●	●	●	●	●	●	●
			250	12.5	25	24.1	6.2				●	●	●	●	●	●	●	●	●	●	●
			300	15	30	29.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			320	16	32	30.2	7.2				●	●	●	●	●	●	●	●	●	●	●
Right angle shoulder milling			ZCFW 080-R0.3	0.3	8	9.7	2.1				●	●	●	●	●	●	●	●	●	●	●
			100-R0.3	0.3	10	12.1	2.7				●	●	●	●	●	●	●	●	●	●	●
			100-R0.5	0.5	10	12.1	2.7				●	●	●	●	●	●	●	●	●	●	●
			100-R1.0	1.0	10	12.1	2.7				●	●	●	●	●	●	●	●	●	●	●
			120-R0.3	0.3	12	14.6	3.2				●	●	●	●	●	●	●	●	●	●	●
			120-R0.5	0.5	12	14.6	3.2				●	●	●	●	●	●	●	●	●	●	●
			120-R1.0	1.0	12	14.6	3.2				●	●	●	●	●	●	●	●	●	●	●
			160-R0.3	0.3	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			160-R0.5	0.5	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			160-R1.0	1.0	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			160-R1.5	1.5	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			160-R2.0	2.0	16	16.6	4.2				●	●	●	●	●	●	●	●	●	●	●
			200-R0.3	0.3	20	19.9	5.2				●	●	●	●	●	●	●	●	●	●	●
			200-R0.5	0.5	20	19.9	5.2				●	●	●	●	●	●	●	●	●	●	●
			200-R1.0	1.0	20	19.9	5.2				●	●	●	●	●	●	●	●	●	●	●
			200-R1.5	1.5	20	19.9	5.2				●	●	●	●	●	●	●	●	●	●	●
			200-R2.0	2.0	20	19.9	5.2				●	●	●	●	●	●	●	●	●	●	●
			250-R0.3	0.3	25	22.6	6.2				●	●	●	●	●	●	●	●	●	●	●
			250-R0.5	0.5	25	22.6	6.2				●	●	●	●	●	●	●	●	●	●	●
			250-R1.0	1.0	25	22.6	6.2				●	●	●	●	●	●	●	●	●	●	●
			250-R1.5	1.5	25	22.6	6.2				●	●	●	●	●	●	●	●	●	●	●
			250-R2.0	2.0	25	22.6	6.2				●	●	●	●	●	●	●	●	●	●	●
			300-R0.3	0.3	30	27.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			300-R0.5	0.5	30	27.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			300-R1.0	1.0	30	27.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			320-R0.3	0.3	32	28.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			320-R0.5	0.5	32	28.2	7.2				●	●	●	●	●	●	●	●	●	●	●
			320-R1.0	1.0	32	28.2	7.2				●	●	●	●	●	●	●	●	●	●	●
Finishing of hard head positing			BNM 060	3	6	5	2				●	●	●	●	●	●	●	●	●	●	●
			070	3.5	7	5.5	2				●	●	●	●	●	●	●	●	●	●	●
			080	4	8	7	2.4				●	●	●	●	●	●	●	●	●	●	●
			100	5	10	8.5	2.6				●	●	●	●	●	●	●	●	●	●	●
			110	5.5	11	9	2.6				●	●	●	●	●	●	●	●	●	●	●
			120	6	12	10	3				●	●	●	●	●	●	●	●	●	●	●
			160	8	16	12	4				●	●	●	●	●	●	●	●	●	●	●
			200	10	20	15	5				●	●	●	●	●	●	●	●	●	●	●
			250	12.5	25	18.5	6				●	●	●	●	●	●	●	●	●	●	●
			300	15	30	22.5	7				●	●	●	●	●	●	●	●	●	●	●
			320	16	32	23.5	7				●	●	●	●	●	●	●	●	●	●	●
Finishing of hard head positing			P3200- D08	4	8	7	2.4				●	●	●	●	●	●	●	●	●	●	●
			D10	5	10	8.5	2.6				●	●	●	●	●	●	●	●	●	●	●
			D12	6	12	10	3				●	●	●	●	●	●	●	●	●	●	●
			D16	8	16	12	4				●	●	●	●	●	●	●	●	●	●	●
			D20	10	20	15	5				●	●	●	●	●	●	●	●	●	●	●
			D25	12.5	25	18.5	6				●	●	●	●	●	●	●	●	●	●	●
			D30	15	30	22.5	7				●	●	●	●	●	●	●	●	●	●	●
			D32	16	32	23.5	7				●	●	●	●	●	●	●	●	●	●	●

CNC Milling Inserts
CNC Cutting Tools

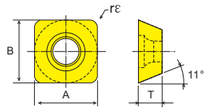
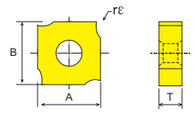
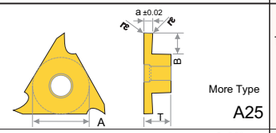
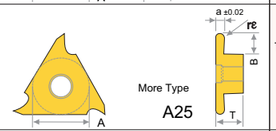
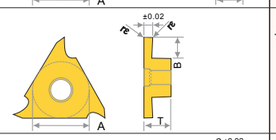
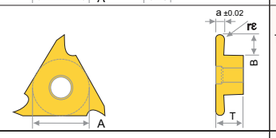
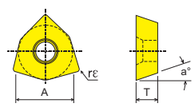
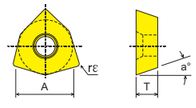
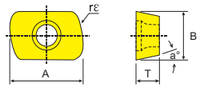
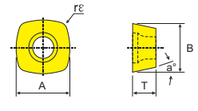
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◐		◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Plunge milling / chamfering		 Bottom blade	ADMT 080308L	0.8	7.8	6.2	3.0		15							●		●	●		
			100308L	0.8	10.4	6.35	3.18		15							●		●	●		
			12T308L	0.8	12.6	7.93	3.9		15							●		●	●		
			APMT 160408L	0.8	16.45	9.53	4.76		11							●		●	●		
			170408L	0.8	17.6	9.53	4.76		11												
			190508L	0.8	19.6	10	5.0		11												
			250508L	0.8	25.4	11	5.5		11												
Plunge milling / chamfering		 Peripheral blade	APMT 090208R	0.8	9.1	5.1	2.6		11							●		●	●		
			ACMT 100308R	0.8	10.1	6.35	3.4		7							●		●	●		
			APMT 100320R	2.0	10.1	6.35	3.4		7												
			12T308R	0.8	13.14	7.93	3.9		11							●		●	●		
			12T320R	2.0	13.14	7.93	3.9		11												
			12T330R	3.0	13.14	7.93	3.9		11												
			150408R	0.8	15.88	9.53	4.76		11							●		●	●		
			150430R	3.0	15.88	9.53	4.76		11												
Plunge milling / chamfering			CCMT 060204	0.4	6.35		2.38									●	●	●	●	●	●
			09T304	0.4	9.525		3.9									●	●	●	●	●	●
			09T308	0.8	9.525		3.9									●	●	●	●	●	●
			CPMT 090308	0.8	9.525		3.15											●	●	●	
			120408	0.8	12.7		4.76											●	●	●	
			120430	3.0	12.7		4.76														
Plunge milling / chamfering			CPMT 080204-M64	0.4	7.94		2.38									●	●	●			
			090204-M64	0.4	9.525		2.38									●	●	●			
			120308-M64	0.8	12.7		3.15									●	●	●			
			160408-M64	0.8	15.875		4.76									●	●	●			
			160430-M64	3.0	15.875		4.76														
			190408-M64	0.8	19.05		4.76														
			190430-M64	3.0	19.05		4.76														
Profiling and chamfering			TCMX 090204	0.4	8.6	5.56	2.38									●		●	●	●	
			110204	0.4	10	6.35	2.38									●		●	●	●	
			16T304	0.4	15.5	9.525	2.38									●		●	●	●	
chamfering			TCMT 090204	0.4	8.6	5.56	2.38									●		●	●	●	
			110204	0.4	10	6.35	2.38									●		●	●	●	
			16T304	0.4	15.5	9.525	2.38									●		●	●	●	
Right Angle Milling			SPMW 090304	0.4	9.525	9.525	3.18		11°							●		●	●	●	
			SDMB 26152	0.4	8.3	8.3	2.5		15°							●		●	●	●	
Milling Inserts			APKT 150412-T18	1.2	16.33	12.7	4.76									●	●	●	●		
			150412-M37	1.2	16.33	12.7	4.76									●	●	●	●		
			LPMT 150412-T18	1.2	16.33	12.7	4.76									●	●	●	●		
			150412-M37	1.2	16.33	12.7	4.76									●	●	●	●		
Milling Inserts			SPMT 120408-T18	0.8	12.7	12.7	4.76									●	●	●	●		
			120408-M37	0.8	12.7	12.7	4.76									●	●	●	●		
Milling Inserts			MPHT 060304-M38	0.4	6.35	6.35	3.18									●		●	●		
			080305-M38	0.5	8.3	8.3	3.18									●		●	●		
			120408-M38	0.8	12.7	12.7	4.76									●		●	●		

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

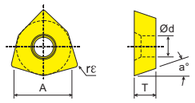
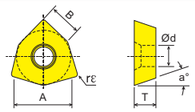
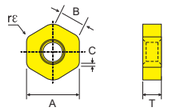
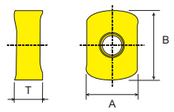
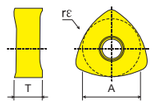
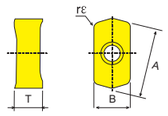
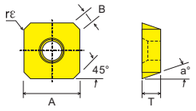
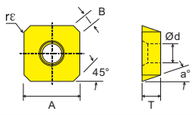
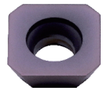
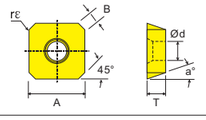
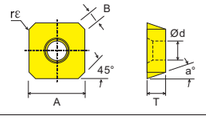
		PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◐		◐	✕	✕	✕	◐	●
M	Stainless Steel				◐		◐	✕	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	ZP201	PMS35	PMS40	PMS30	PMS15
Milling Inserts			SPMG 050204-M41	0.4	5.0	5.0	2.38							●		●	●	●	●	●	
			060204-M41	0.4	6.0	6.0	2.38							●		●	●	●	●	●	
			07T308-M41	0.8	7.94	7.94	3.97							●		●	●	●	●	●	
			090408-M41	0.8	9.8	9.8	4.30							●		●	●	●	●	●	
			110408-M41	0.8	11.5	11.5	4.8							●		●	●	●	●	●	
			140512-M41	1.2	14.3	14.3	5.0							●		●	●	●	●	●	
Milling Inserts			XSEQ 1202		12.7	12.7	2.3									●		●	●		
			1203		12.7	12.7	3.0									●		●	●		
			12T3		12.7	12.7	3.5									●		●	●		
			1204		12.7	12.7	4.0									●		●	●		
			12T4		12.7	12.7	4.5									●		●	●		
Grooving Inserts		 More Type A25	TGF32L 150	0.1	16	2.0	3.18		1.5		●	●	●	●	●	●	●	●	●	●	●
			200	0.15		2.8			2.0		●	●	●	●	●	●	●	●	●	●	●
			250	0.15		2.8			2.5		●	●	●	●	●	●	●	●	●	●	●
			300	0.15		2.8			3.0		●	●	●	●	●	●	●	●	●	●	●
			350	0.15		2.8			3.5		●	●	●	●	●	●	●	●	●	●	●
Grooving Inserts		 More Type A25	TGF32L 150-R0.75	0.75	16	2.0	3.18		R0.75		●	●	●	●	●	●	●	●	●	●	●
			200-R1.0	1.0		2.8			R1.0		●	●	●	●	●	●	●	●	●	●	●
			250-R1.25	1.25		2.8			R1.25		●	●	●	●	●	●	●	●	●	●	●
			300-R1.5	1.5		2.8			R1.5		●	●	●	●	●	●	●	●	●	●	●
Grooving Inserts			TT43L 200	0.2	22	4.8	5.0		2.0		●	●	●	●	●	●	●	●	●	●	●
			250	0.2					2.5		●	●	●	●	●	●	●	●	●	●	●
			300	0.2					3.0		●	●	●	●	●	●	●	●	●	●	●
			350	0.2					3.5		●	●	●	●	●	●	●	●	●	●	●
			400	0.2					4.0		●	●	●	●	●	●	●	●	●	●	●
			500	0.2					5.0		●	●	●	●	●	●	●	●	●	●	●
Grooving Inserts			TT43L 200-R1.0	1.0	22	4.8	5.0		R1.0		●	●	●	●	●	●	●	●	●	●	●
			250-R1.25	1.25					R1.25		●	●	●	●	●	●	●	●	●	●	●
			300-R1.5	1.5					R1.5		●	●	●	●	●	●	●	●	●	●	●
			350-R1.75	1.75					R1.75		●	●	●	●	●	●	●	●	●	●	●
			400-R2.0	2.0					R2.0		●	●	●	●	●	●	●	●	●	●	●
			500-R2.5	2.5					R2.5		●	●	●	●	●	●	●	●	●	●	●
High feed milling			JOMW 06T215ZZSR-M40	1.5	6.35	2.78	13°												●	●	
			080320ZZSR-M40	2.0	8.0	3.18	13°												●	●	
			JDMW 09T320ZDSR-M40	2.0	9.525	3.97	15°												●	●	
			120420ZDSR-M40	2.0	12.0	4.76	15°												●	●	
			140520ZDSR-M40	2.0	14.0	5.56	15°												●	●	
High feed milling			JOMT 06T215ZZSR-M39	1.5	6.35	2.78	13°												●	●	
			080320ZZSR-M39	2.0	8.0	3.18	13°												●	●	
			JDMT 09T320ZDSR-M39	2.0	9.525	3.97	15°												●	●	
			120420ZDSR-M39	2.0	12.0	4.76	15°												●	●	
			140520ZDSR-M39	2.0	14.0	5.56	15°												●	●	
High feed milling			EPNW 0603TN-8	8	10	6.35	3.18	11°											●	●	
			EPMT 0603TN-8	8	12	6.35	3.18	11°											●	●	
			EDNW 12T3TN-10	10	10	10	3.97	15°											●	●	
			EDMT 12T3TN-10	10	12	10	3.97	15°											●	●	
High feed milling			EPNW 0803TN-10	10	8.1	8.1	3.18	11°											●	●	
			EDNW 10T3TN-10	10	10	10	3.97	15°											●	●	
			SDNW 1205ZDTN-R15	15	12.7	12.7	5.56	15°											●	●	
			SDMT 1205ZDTN-R15	15	12.7	12.7	5.56	15°											●	●	
			EDNW 13T4TN-10	10	13.5	13.5	5.56	15°											●	●	
			13T4TN-15	15	13.5	13.5	5.56	15°											●	●	
			SDNW 1505ZDTN-R15	15	15.875	15.875	5.56	15°											●	●	
			SDMT 1505ZDTN-R15	15	15.875	15.875	5.56	15°											●	●	
			1505ZDTN-C15	15	15.875	15.875	5.56	15°											●	●	

CNC Milling Inserts
CNC Cutting Tools

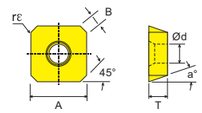
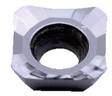
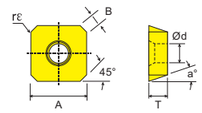
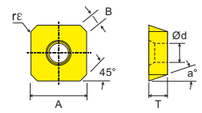
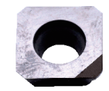
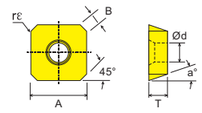
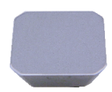
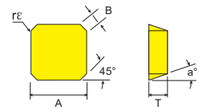
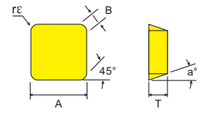
Cutting Environment: ● Stable Cutting; ◒ General Cutting; ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	P2001	PMS35	PMS40	PMS30	PMS15
P	Steel		◒	◒			◒	✕	✕	✕	◒	●
M	Stainless Steel				◒		◒	✱	✱	✱	◒	◒
K	Iron		●		◒		◒	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◒						
S	Carbide/Powder Metallurgy	●							✕	✕	◒	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◒	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	P2001	PMS35	PMS40	PMS30	PMS15
High feed milling			WOMW 04T215-M65	1.5	6.5	2.8	13°									•	•	•			
			WDMW 050316-M65	1.6	8	3.2	13°									•	•	•			
			050316-M66	1.6	8	3.2	13°									•	•	•			
			06T320-M65	2.0	10	3.97	13°									•	•	•			
			06T320-M66	2.0	10	3.97	13°									•	•	•			
			080520-M65	2.0	13	5.5	13°									•	•	•			
			080520-M66	2.0	13	5.5	13°									•	•	•			
			10X620-M65	2.0	16	6	13°									•	•	•			
			10X620-M66	2.0	16	6	13°									•	•	•			
High feed milling			WPGT 050315-M70	1.5	7.94	6	3.5	11°								•	•	•	•		
			060415-M70	1.5	9.525		4.2	11°								•	•	•	•		
			080615-M70	1.5	12.85		6.35	11°								•	•	•	•		
			090725-M70	2.5	15		7.0	11°								•	•	•	•		
			050315-M71	1.5	7.94		3.5	11°								•	•	•	•		
			060415-M71	1.5	9.525		4.2	11°								•	•	•	•		
			080615-M71	1.5	12.85		6.35	11°								•	•	•	•		
			090725-M71	2.5	15		7.0	11°								•	•	•	•		
Surface milling			HNGX 0906-M80	1.2	15.88	9	1.8	5.56								•	•	•	•	•	
			0906-M81													•	•	•	•	•	
High feed milling			BLMP 0603R-G12	-	6.39	9	3.73									•	•	•	•	•	
High feed milling			BLMP 1205R-G12	15	12	-	5.5									•	•	•	•	•	
High feed milling			LNMU 0303-M68	1.2	11.59	6.0	4.29									•	•	•	•	•	
			0303-M69	1.2	11.59	6.0	4.29														
Surface milling			SEET 13T3-M77	1.5	13.4	1.9	3.97	20°							•	•	•	•	•		
			SEMT 13T3-M78												•	•	•	•	•		
			13T3-M79												•	•	•	•	•		
Surface milling			SEET 12T3-M47	-	13.4	2.55	3.97	4.1	20°							•	•	•			
			12T3-M48													•	•	•			
			12T3-M49													•	•	•			
			12T3-M38													•	•	•			
			12T3-T39													•	•	•			
			12T3-M33													•	•	•			
			12T3-M51													•	•	•			
			12T3-M52													•	•	•			
			12T3-G25												-	•	•	•			
Surface milling			SECA 1204-M74	-	12.7	2.66	4.76	5.56	20°							•	•	•	•		
			1204-M75	-	12.7	2.66	4.76	5.56	20°							•	•	•	•		
Surface milling			SEKT 1204-M75	-	12.7	2.66	4.76	5.56	20°							•	•	•	•		

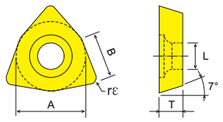
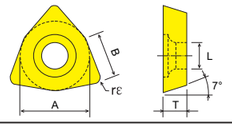
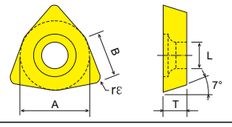
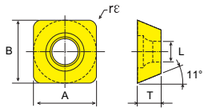
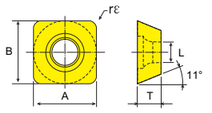
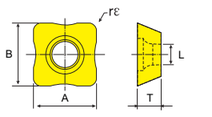
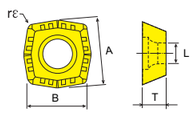
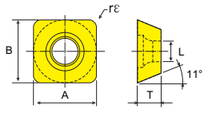
Cutting Environment: ● Stable Cutting; ◒ General Cutting; ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	P2001	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◒		◒	✕	✕	✕	◒	●
M	Stainless Steel				◒		◒	✱	✱	✱	◒	◒
K	Iron		●		◒		◒	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◒						
S	Carbide/Powder Metallurgy	●							✕	✕	◒	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◒	●

Application	Product Image	Dimensioning	Specification	Dimension (mm) rε	A	B	T	L	a	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	P2001	PMS35	PMS40	PMS30	PMS15
Surface milling			SEHT 1204-M74	-	12.7	2.66	4.76	5.56	20°									•	•	•	•
Surface milling			SEHT 1204-M53	-	12.7	2.66	4.76	5.56	20°					•							
Surface milling			SEHT 1204	-	12.7	2.66	4.76	5.56	20°			•									
Surface milling			SEHT 1204	-	12.7	2.66	4.76	5.56	20°			•	•								
Surface milling			SDKN 1203-M72	-	12.7	1.7	3.18	15°								•	•	•		•	•
			1504-M72	-	15.875	1.7	4.76	15°								•	•	•		•	•
			SEEN 1203-M76	1.0	12.7	1.4	3.18	20°								•	•	•		•	•
			1504-M76	1.0	15.875	1.4	4.76	20°								•	•	•		•	•
			SEKN 1203-M76	-	12.7	1.4	3.18	20°								•	•	•		•	•
			1504-M76	-	15.875	1.4	4.78	20°								•	•	•		•	•
			SPKN 1203-M67	-	12.7	1.4	3.18	11°								•	•	•		•	•
Surface milling			SEKR 1203-M73	1.0	12.7	1.4	3.18	20°									•	•	•	•	•
			1504-M73	1.0	15.875	1.4	4.76	20°									•	•	•	•	•

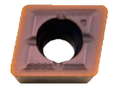
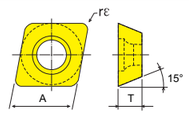
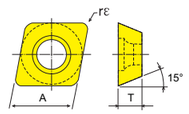
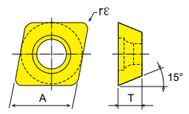
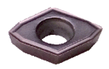
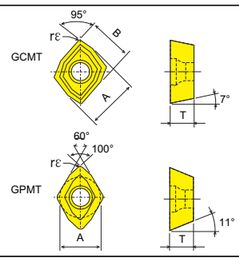
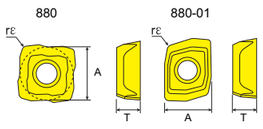
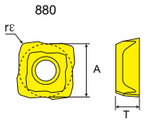
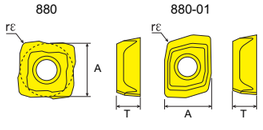
Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	P201	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◐		●	✕	✕	✕	◐	●
M	Stainless Steel					◐		◐	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	rε	A	B	T	L	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	P201	PMS35	PMS40	PMS30	PMS15
Drilling Inserts			WCMX 030208-M61	0.8	5.56	3.8	2.38	2.8					•	•	•	•	•	•	•	•
			040208-M61	0.8	6.35	4.3	2.38	3.1					•	•	•	•	•	•	•	•
			050308-M61	0.8	7.94	5.4	3.18	3.2					•	•	•	•	•	•	•	•
			06T308-M61	0.8	9.525	6.5	3.97	3.7					•	•	•	•	•	•	•	•
			080412-M61	1.2	12.7	8.7	4.76	4.3					•	•	•	•	•	•	•	•
Drilling Inserts			WCMX 030208-M60	0.8	5.56	3.8	2.38	2.8					•	•	•	•	•	•	•	•
			040208-M60	0.8	6.35	4.3	2.38	3.1					•	•	•	•	•	•	•	•
			050308-M60	0.8	7.94	5.4	3.18	3.2					•	•	•	•	•	•	•	•
			06T308-M60	0.8	9.525	6.5	3.97	3.7					•	•	•	•	•	•	•	•
			080412-M60	1.2	12.7	8.7	4.76	4.3					•	•	•	•	•	•	•	•
Drilling Inserts			WCMX 030208	0.8	5.56	3.8	2.38	2.8					•	•	•	•	•	•	•	•
			040208	0.8	6.35	4.3	2.38	3.1					•	•	•	•	•	•	•	•
			050308	0.8	7.94	5.4	3.18	3.2					•	•	•	•	•	•	•	•
			06T308	0.8	9.525	6.5	3.97	3.7					•	•	•	•	•	•	•	•
			080412	1.2	12.7	8.7	4.76	4.3					•	•	•	•	•	•	•	•
Drilling Inserts			SPMG 050204-M41	0.4	5.0	5.0	2.38	2.2					•	•	•	•	•	•	•	•
			060204-M41	0.4	6.0	6.0	2.38	2.6					•	•	•	•	•	•	•	•
			07T308-M41	0.8	7.94	7.94	3.97	2.8					•	•	•	•	•	•	•	•
			090408-M41	0.8	9.8	9.8	4.30	4.2					•	•	•	•	•	•	•	•
			110408-M41	0.8	11.5	11.5	4.8	4.4					•	•	•	•	•	•	•	•
			140512-M41	1.2	14.3	14.3	5.0	5.75					•	•	•	•	•	•	•	•
Drilling Inserts			SPMG 050204-T18	0.4	5.0	5.0	2.38	2.2					•	•	•	•	•	•	•	•
			060204-T18	0.4	6.0	6.0	2.38	2.6					•	•	•	•	•	•	•	•
			07T308-T18	0.8	7.94	7.94	3.97	2.8					•	•	•	•	•	•	•	•
			090408-T18	0.8	9.8	9.8	4.30	4.2					•	•	•	•	•	•	•	•
			110408-T18	0.8	11.5	11.5	4.8	4.4					•	•	•	•	•	•	•	•
			140512-T18	1.2	14.3	14.3	5.0	5.75					•	•	•	•	•	•	•	•
Drilling Inserts			SOMT 040202-M59	0.2	4.0	4.0	1.8	2.0					•	•	•	•	•	•	•	•
			050204-M59	0.4	4.9	4.9	2.38	2.25					•	•	•	•	•	•	•	•
			060204-M59	0.4	5.7	5.7	2.38	2.6					•	•	•	•	•	•	•	•
			070306-M59	0.6	6.8	6.8	2.8	2.6					•	•	•	•	•	•	•	•
			08T306-M59	0.6	7.9	7.9	3.97	2.85					•	•	•	•	•	•	•	•
			09T308-M59	0.8	9.2	9.2	3.97	3.8					•	•	•	•	•	•	•	•
			11T308-M59	0.8	11.0	11.0	3.97	3.8					•	•	•	•	•	•	•	•
			130408-M59	0.8	12.8	12.8	4.4	4.4					•	•	•	•	•	•	•	•
			150510-M59	1.0	15.0	15.0	4.8	5.4					•	•	•	•	•	•	•	•
Drilling Inserts			XOMT 040204-M58	0.4	4.9	4.3	2.4	2.3					•	•	•	•	•	•	•	•
			050204-M58	0.4	5.4	4.8	2.4	2.3					•	•	•	•	•	•	•	•
			060204-M58	0.4	6.6	5.8	2.5	2.5					•	•	•	•	•	•	•	•
			07T205-M58	0.5	7.8	6.9	2.8	2.8					•	•	•	•	•	•	•	•
			090305-M58	0.5	9.6	8.4	3.3	3.4					•	•	•	•	•	•	•	•
			11T306-M58	0.6	11.4	10.0	4.0	4.0					•	•	•	•	•	•	•	•
			130406-M58	0.6	13.6	11.9	4.5	4.5					•	•	•	•	•	•	•	•
			15M508-M58	0.8	15.9	13.9	5.0	5.5					•	•	•	•	•	•	•	•
			180508-M58	0.8	18.9	16.5	5.5	6.0					•	•	•	•	•	•	•	•
Drilling Inserts			SPMT 040204-M58	0.4	4.7	4.7	2.4	2.3					•	•	•	•	•	•	•	•
			050204-M58	0.4	5.1	5.1	2.4	2.3					•	•	•	•	•	•	•	•
			060205-M58	0.5	6.2	6.2	2.5	2.5					•	•	•	•	•	•	•	•
			07T208-M58	0.8	7.5	7.5	2.8	2.8					•	•	•	•	•	•	•	•
			090308-M58	0.8	9.2	9.2	3.3	3.4					•	•	•	•	•	•	•	•
			11T308-M58	0.8	11.0	11.0	4.0	4.0					•	•	•	•	•	•	•	•
			130410-M58	1.0	13.0	13.0	4.5	4.5					•	•	•	•	•	•	•	•
			15M510-M58	1.0	15.2	15.2	5.0	5.5					•	•	•	•	•	•	•	•
			180510-M58	1.0	18.2	18.2	5.5	6.0					•	•	•	•	•	•	•	•

Cutting Environment: ● Stable Cutting ◐ General Cutting ✕ Unstable Cutting

		PCD1	CBN1	CBN2	PM30	N021	P141	P201	PMS35	PMS40	PMS30	PMS15
P	Steel			●	◐		●	✕	✕	✕	◐	●
M	Stainless Steel					◐		◐	✕	✕	◐	◐
K	Iron		●		◐		◐	✕	✕	✕		
N	Aluminum/Copper/Magnesium/Zinc/Plastic/Wood	●				◐						
S	Carbide/Powder Metallurgy	●							✕	✕	◐	●
H	Titanium/Superalloy/Carbon Fiber	●							✕	✕	◐	●

Application	Product Image	Dimensioning	Specification	rε	A	B	T	L	Matching Toolholder	PCD1	CBN1	CBN2	PM30	N021	P141	P201	PMS35	PMS40	PMS30	PMS15
Drilling Inserts	 Drilling Inserts		WDXT 042004-M54	0.4	4.2		2.0						•	•						
			052504-M54	0.4	5.0		2.5						•	•						
			063006-M54	0.6	6.0		3.0						•	•						
			073506-M54	0.6	7.5		3.5						•	•						
			094008-M54	0.8	9.6		4.0						•	•						
			125012-M54	1.2	12.4		5.0						•	•						
			156012-M54	1.2	15.2		6.0						•	•						
			186012-M54	1.2	18.0		8.0						•	•						
Drilling Inserts	Drilling Inserts		WDXT 042004-G11	0.4	4.2		2.0						•	•						
			052504-G11	0.4	5.0		2.5						•	•						
			063006-G11	0.6	6.0		3.0						•	•						
			073506-G11	0.6	7.5		3.5						•	•						
			094008-G11	0.8	9.6		4.0						•	•						
			125012-G11	1.2	12.4		5.0						•	•						
			156012-G11	1.2	15.2		6.0						•	•						
			186012-G11	1.2	18.0		8.0						•	•						
Drilling Inserts	Drilling Inserts		WDXT 042004-T41	0.4	4.2		2.0						•	•						
			052504-T41	0.4	5.0		2.5						•	•						
			063006-T41	0.6	6.0		3.0						•	•						
			073506-T41	0.6	7.5		3.5						•	•						
			094008-T41	0.8	9.6		4.0						•	•						
			125012-T41	1.2	12.4		5.0						•	•						
			156012-T41	1.2	15.2		6.0						•	•						
			186012-T41	1.2	18.0		8.0						•	•						
Drilling Inserts			GCMT 040204-M55	0.4	5.0	4.7	2.38											•	•	
			GPMT 060204-M55	0.4	5.56	-	2.38											•	•	
			070204-M55	0.4	6.35	-	2.38											•	•	
			090304-M55	0.4	7.94	-	3.18											•	•	
			11T308-M55	0.8	9.525	-	3.97											•	•	
			140408-M55	0.8	12.7	-	4.76											•	•	
Drilling Inserts			880- 010203H-C-M56	0.3	4.80	-	2.2	-	-						•	•				
			020204H-C-M56	0.4	4.90	-	2.4	-	-						•	•				
			030305H-C-M56	0.5	5.70	-	2.6	-	-						•	•				
			040305H-C-M56	0.5	6.80	-	2.8	-	-						•	•				
			050305H-C-M56	0.5	8.40	-	3.0	-	-						•	•				
			060406H-C-M56	0.6	10.20	-	3.5	-	-						•	•				
			070406H-C-M56	0.6	12.35	-	4.0	-	-						•	•				
			080508H-C-M56	0.8	14.85	-	4.5	-	-						•	•				
			090608H-C-M56	0.8	17.90	-	5.5	-	-						•	•				
Drilling Inserts			880- 020204H-C-T24	0.4	4.90	-	2.4	-	-						•	•				
			030305H-C-T24	0.5	5.70	-	2.6	-	-						•	•				
			040305H-C-T24	0.5	6.80	-	2.8	-	-						•	•				
			050305H-C-T24	0.5	8.40	-	3.0	-	-						•	•				
			060406H-C-T24	0.6	10.20	-	3.5	-	-						•	•				
			070406H-C-T24	0.6	12.35	-	4.0	-	-						•	•				
			080508H-C-T24	0.8	14.85	-	4.5	-	-						•	•				
			090608H-C-T24	0.8	17.90	-	5.5	-	-						•	•				
Drilling Inserts	Deep-feed		880- 010203H-C-M57	0.3	4.80	-	2.2	-	-						•	•				
			020204H-C-M57	0.4	4.90	-	2.4	-	-						•	•				
			030305H-C-M57	0.5	5.70	-	2.6	-	-						•	•				
			040305H-C-M57	0.5	6.80	-	2.8	-	-						•	•				
			050305H-C-M57	0.5	8.40	-	3.0	-	-						•	•				
			060406H-C-M57	0.6	10.20	-	3.5	-	-						•	•				
			070406H-C-M57	0.6	12.35	-	4.0	-	-						•	•				
			080508H-C-M57	0.8	14.85	-	4.5	-	-						•	•				
			090608H-C-M57	0.8	17.90	-	5.5	-	-						•	•				

880 series quick drill stock please contact customer service!