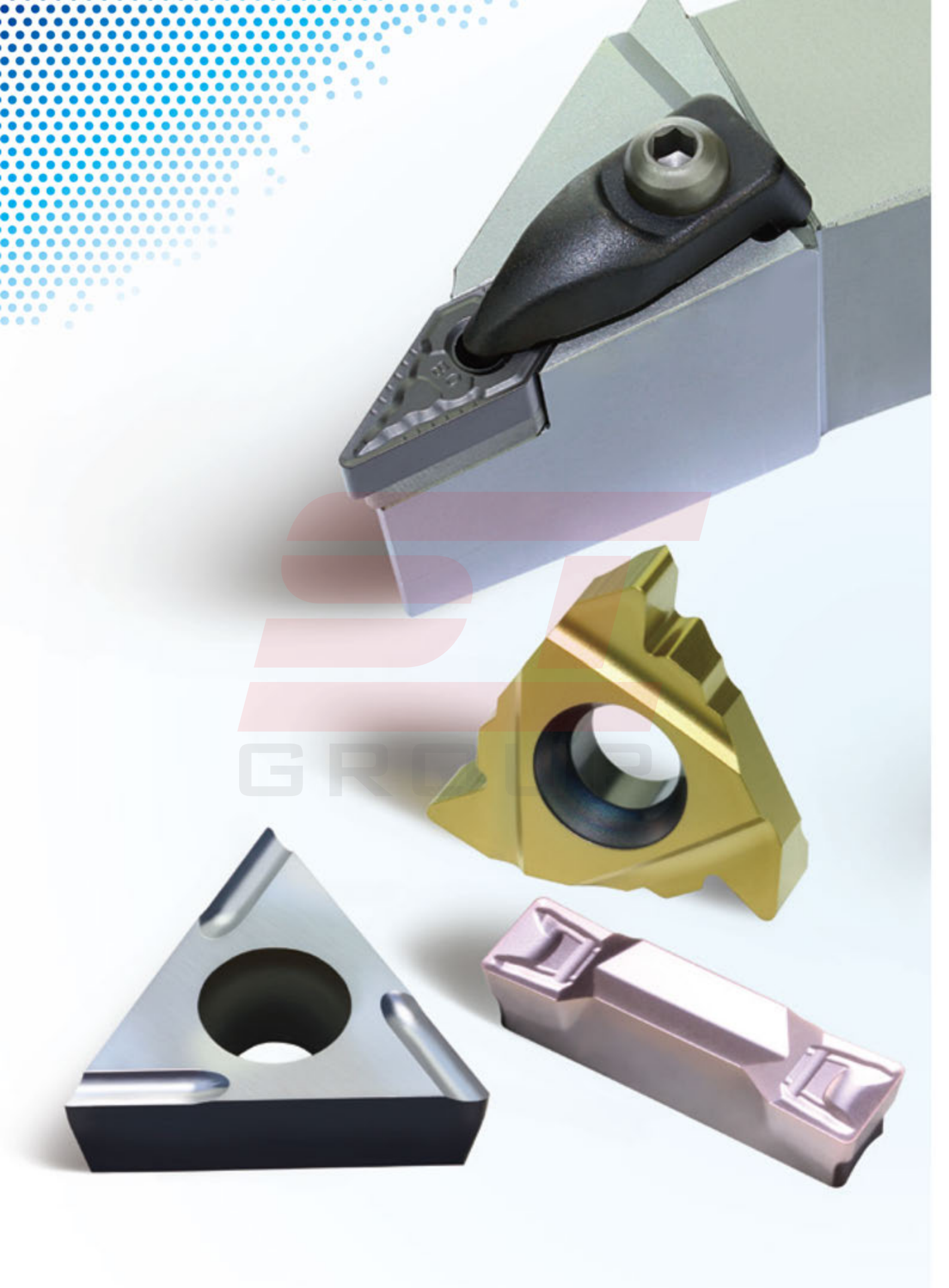
Contents



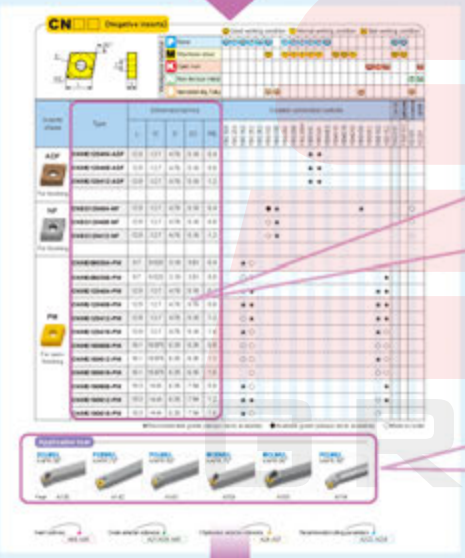
Turning Tools

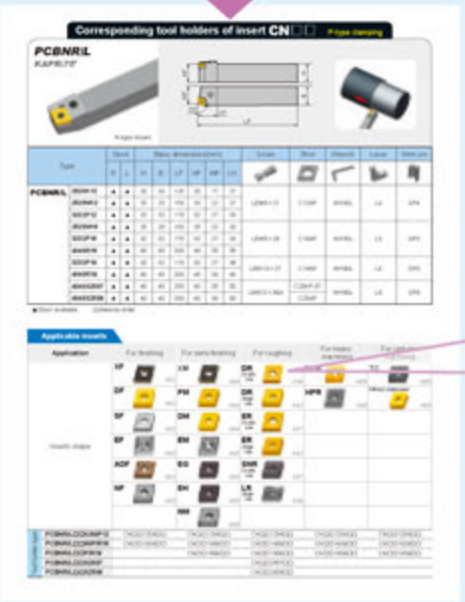
General turning tools
Parting and grooving tools
Threading tools

Turning A

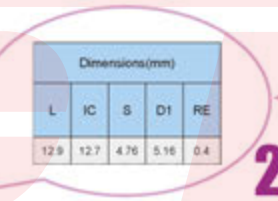
Guide to select general turning tools

Selection A





1 I want to order inserts
♦Shape, ♦Size, ♦Chipbreaker



2 Details of inserts
♦Shape, ♦Size,
♦Chipbreaker,
♦Grade, ♦Stock

Applicable tool holders
♦Approach angle,
Page

4 Return to locate inserts

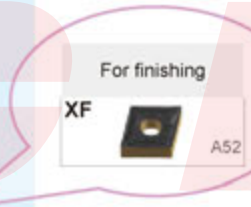
3 Selecting tool holder
♦Tool holder type, Size
♦Stock
♦Operation gener
♦Applicable inserts

Guide to select general turning tools

Selection B

1 I want to order tool holders

- ♦Approach angle,
- ♦Clamping system



2 Details of tool holder

- ♦Tool holder type, Size
- ♦Operation genre
- ♦Applicable inserts

4 Return to locate tool holder

Dimensions(mm)				
L	IC	S	D1	RE
12.9	12.7	4.76	5.16	0.4

3 Details of insert

- ♦Shape, ♦Size,
- ♦Chipbreaker,
- ♦Grade, ♦Stock

Applicable tool holders

- ♦Approach angle,
- Page

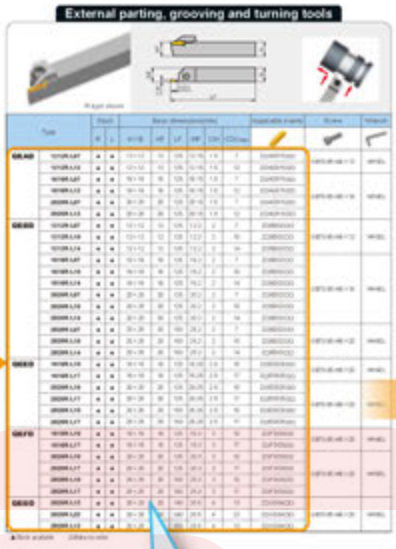
Guide to select parting and grooving tools

Parting and grooving tools

Page A256-257 A257

Page A262-265 A266-267

External parting, grooving and turning tools



Parting inserts

1 Selection of tool holder type

2 Tool holder type, Size and applicable inserts

3 Insert type, Chip-breaker, Size and grade

Little squirrel series

Parting inserts

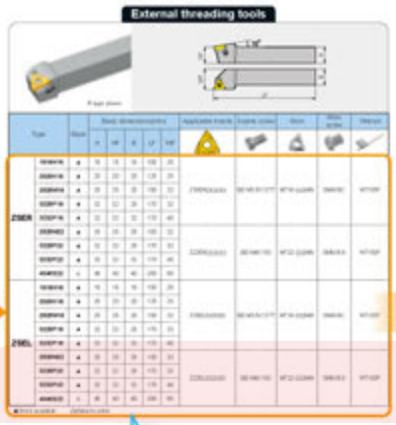
1 Selecting insert type

2 Insert type, Chip-breaker, Size and grade

Guide to select threading tools

Threading tools

Page A308 A309



1 Selection of tool holder type

2 Tool holder type, Size and applicable inserts

3 Insert type, Chip-breaker, Size and grade

Threading inserts

1 Selecting insert category

2 Insert type, Chip-breaker, Size and grade

Cemented carbide and cermet inserts

Negative inserts

For finishing

	CNMG-XF	DNMG-XF	SNMG-XF	TNMG-XF	VNMG-XF	WNMG-XF
Cutting edge length	12	11,15	12	16	16	06,08
Page	A52	A60	A68	A78	A85	A88

	DNEG-NGF	VNEG-NGF	CNMG-DF	CNMG-SF	CNMG-EF	CNMG-ADF	CNEG-NF	DNMG-DF
Cutting edge length	15	16	09,12	09,12	09,12	12	12	11,15
Page	A62	A86	A52	A52	A52	A53	A53	A60

	DNMG-SF	DNMG-EF	DNMG-ADF	DNEG-NF	SNMG-DF	SNMG-EF	SNMG-ADF	SNMG-SF
Cutting edge length	11,15	11,15	11,15	15	09,12	09,12,15	12	09,12,15
Page	A60	A61	A61	A61	A68	A68	A69	A69

	TNMG-DF	TNMG-SF	TNMG-EF	TNMG-ES	TNMG-ADF	VNMG-DF	VNMG-EF	VNMG-ADF
Cutting edge length	16,22	11,16,22	11,16,22	16	16	16	16	16
Page	A78	A78	A79	A79	A79	A85	A85	A85

	VNEG-NF	VNMG-SF	WNMG-DF	WNMG-SF	WNMG-EF	WNMG-ES	WNMG-ADF	WNEG-NF
Cutting edge length	16	16	06,08	06,08	06,08	08	06,08	08
Page	A85	A86	A88	A88	A89	A89	A89	A89

For semi-finishing

	CNMG-XM	DNMG-XM	SNMG-XM	TNMG-XM	VNMG-XM	WNMG-XM
Cutting edge length	12,16,19	11,15	12,15,19	16,22	16	06,08
Page	A54	A63	A70	A80	A86	A90

	CNMG-PM	CNMG-DM	CNMG-EM	CNMG-EG	CNMG-EH	CNMG-NM	DNMG-PM	DNMG-DM
Cutting edge length	09,12,16,19	09,12,16,19	12,16	12	12	12	11,15	11,15
Page	A53	A54	A55	A55	A55	A55	A62	A63

Negative inserts

	DNMG-EM	DNMG-EG	DNMG-NM	SNMG-PM	SNMG-DM	SNMG-EM	SNMG-EG	SNMG-NM
Cutting edge length	11,15	11,15	15	09,12,15,19	09,12,15,19	12,15	12	12
Page	A64	A64	A64	A70	A71	A71	A72	A72

	TNMG-PM	TNMG-DM	TNMG-EM	TNMG-EG	TNMG-EH	VNMG-PM	VNMG-DM	VNMG-EM
Cutting edge length	11,16,22	11,16,22	16,22	16	16	16	16	16
Page	A80	A81	A81	A81	A82	A86	A86	A87

	VNMG-EG	VNMG-NM	WNMG-PM	WNMG-DM	WNMG-EM	WNMG-EG	WNMG-EH	WNMG-NM
Cutting edge length	16	16	06,08	06,08	06,08	08	08	08
Page	A87	A87	A90	A91	A91	A91	A92	A92

For roughing

	CNMG-SNR	DNMG-SNR	SNMG-SNR	TNMG-SNR	VNMG-SNR	WNMG-SNR
Cutting edge length	12,16,19	15	12	16	16	08
Page	A57	A66	A75	A83	A87	A92

	CNMM-LR	DNMM-LR	SNMM-LR	TNMM-LR	CNMG-DR	CNMM-DR	CNMG-ER	CNMM-ER
Cutting edge length	12,16,19,25	15	12,15,19,25	16,22	12,16,19	12,16,19,25	12,16,19	25
Page	A56	A65	A72	A82	A56	A57	A57	A57

	DNMG-DR	DNMM-DR	DNMG-ER	DNMM-ER	SNMG-DR	SNMM-DR	SNMG-ER	SNMM-ER
Cutting edge length	15	15	15	15	12,15,19	12,15,19,25	12,15,19	25
Page	A65	A65	A65	A66	A73	A74	A74	A75

	TNMG-DR	TNMM-DR	TNMG-ER	WNMG-DR
Cutting edge length	16,22,27	16,22,27	16,22	06,08
Page	A82	A83	A83	A92

Negative inserts

For heavy machining

	CNMM-HPR	SNMM-HPR	CNMM-HDR	DNMM-HDR	SNMM-HDR	TNMM-HDR
Cutting edge length	19,25	19,25	12,16,19	15	12,15,19,25	16,22,27
Page	A58	A76	A58	A66	A75	A84

	LNUX-RF	LNUX-RH
Cutting edge length	19,30	19,30
Page	A94	A94

All round

	CNMG-TC	CNMG	DNMG-TC	SNMG-TC	SNMG	TNMG-TC	VNMG-TC
Cutting edge length	04,08,12,16	12,16,19	15	12	12,15,19,25	16,22	16
Page	A58	A59	A66	A76	A76	A84	A87

Without chipbreaker

	WNMG-TC	CNMA	DNMA	SNMA	TNMA	WNMA
Cutting edge length	08	12,16,19	11,15	09,12,15,19	16,22,27	06,08
Page	A93	A59	A67	A77	A84	A93

Positive inserts

For extra finishing

	CCGT-SF	DCGT-SF	TCGT-SF	VCGT-SF	VBGT-SF	CPGT-SF	DPGT-SF
Cutting edge length	06,09	07,11	06,09,11	11	11	06,09	07,11
Page	A95	A100	A109	A114	A117	A120	A120

	TBGH-L	TPGH-L	TPGT-SF
Cutting edge length	06	09,11	09,11
Page	A121	A121	A122

For finishing

	CCMT-XF	DCMT-XF	SCMT-XF	TCMT-XF	VBMT-XF	VCMT-XF
Cutting edge length	06,09	07,11	09	09,11,16	11,16	11,16
Page	A95	A100	A106	A109	A117	A114

Positive inserts

	VCGT-NGF	VBET-NGF	CCMT-HF	CCMT-EF	CCMT-AHF	DCMT-HF	DCMT-EF	DCMT-AHF
Cutting edge length	16	16	06,09,12	06,09,12	06,09,12	07,11	07,11	07,11
Page	A114	A118	A95	A96	A96	A100	A101	A101

	SCMT-HF	SCMT-EF	SCMT-AHF	TCMT-HF	TCMT-EF	TCMT-AHF	VCGT-NF	VCMT-AHF
Cutting edge length	09	09	09	06,09,11,16	09,11,16	11,16	16	16
Page	A106	A106	A106	A109	A109	A111	A114	A114

	VBMT-AHF	VBMT-HF	VBMT-EF	VBET-NF
Cutting edge length	16	11	11,16	16
Page	A118	A117	A117	A118

For semi-finishing

	CCMT-XM	DCMT-XM	SCMT-XM	TCMT-XM	VBMT-XM	VCMT-XM
Cutting edge length	09,12	07,11	09,12	16	16	16
Page	A96	A101	A107	A111	A118	A115

	CCMT-HM	CCMT-EM	CCMT-EG	DCMT-HM	DCMT-EM	SCMT-HM	SCMT-EM	TCMT-HM
Cutting edge length	06,09,12	06,09,12	06,09	07,11	07, 11	09,12	09,12	09,11,16
Page	A97	A97	A97	A102	A102	A107	A107	A112

	TCMT-EM	TCMT-EG	VBMT-HM	VBMT-EM
Cutting edge length	09,11,16	11	16	11
Page	A111	A111	A119	A118

For roughing

	VBMT-SNR	CCMT-HR	DCMT-HR	SCMT-HR	TCMT-HR	VBMT-HR
Cutting edge length	16	06,09,12	11	09,12	09,11,16,22	16
Page	A119	A98	A102	A108	A112	A119

Positive inserts

For Al machining

	CCGX-LC	DCGX-LC	SCGX-LC	TCGX-LC	VCGX-LC
Cutting edge length	06,09,12	07,11	09,12	09,11,16	11,16,22
Page	A99	A103	A108	A113	A116

	CCGX-LH	DCGX-LH	RCGX-LH	SCGX-LH	TCGX-LH	VCGX-LH
Cutting edge length	06,09,12	07,11	08	09,12	09,11,16	11,16,22
Page	A99	A103	A104	A108	A113	A116

All round

	CCMT-TC	RCM(G)T	RCMX
Cutting edge length	06,09,12	08,10,12,16	08,10,12,16,20,25,32
Page	A98	A104	A105

Parting and grooving inserts

Little squirrel series

QC series shallow grooving inserts


	QC□□R/L	QC□□R/L□□□R
Cutting edge width	1.1~4.8	1.0~4.0
Page	A251-252	A252







	G□MD-GM	G□MD-GM	ZP□D-MG	ZP□S-MG	ZT□D-MG	ZT□D-MM	ZT□S-MG
Cutting edge width	2.5,3,4,5,6	3,4,5,6	1.5,2,2.5,3,4,5,6	2.5,3,4,5,6	2.5,3,4,5,6	1.5,2,2.5,3,4,5,6,8	5,6
Page	A248	A249	A241	A241	A242	A242	A242







	ZT□D-EG	ZT□D-EG	ZIMF-NM	ZIMF-SM	ZR□D-MG	ZR□D-NM	ZR□D-EG
Cutting edge width	1-2.4(tailor-made)	2.4-6.5(tailor-made)	3,4,5,6	3,4,5,6	2.5,3,4,5,6	3,4,5,6	3,4,5,6
Page	A243	A243	A244	A244	A245	A245	A245




	ZIGQ-NM	ZIGQ-NF	ZR□D-LH	ZILD-LC
Cutting edge width	3,4,5,6	3,4,5,6	6,8	8
Page	A246	A246	A247	A247

Supplemental series

	ZQMX-1E
Cutting edge width	3.125,4.125,5.125,6.4,7.05
Page	A253

Threading inserts

Right hand type shown

	ISO metric thread		General pitch thread		Whitworth thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	0.5~6	0.5~6	0.5~5	0.5~5	8~19	8~19
Page	A294	A295	A296	A296	A297	A297

Right hand type shown

	Unified thread		British taper pipe thread		American taper pipe thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	8~24	8~24	11~28	11~28	8~27	8~27
Page	A298	A298	A299	A299	A300	A300

Right hand type shown

Threading inserts with PP chipbreaker

	ISO metric thread		General pitch thread		Whitworth thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	1.0~3.0	1.0~3.0	0.5~5.0(5~48)	0.5~5.0(5~48)	11~19	11~19
Page	A301	A301	A302	A302	A303	A303

Right hand type shown

	Unified thread		British taper pipe thread		American taper pipe thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	12~16	12~16	11~19	11~19	11~19	11.5~18
Page	A304	A304	A305	A305	A306	A306

Right hand type shown

Thick threading insert

	ISO metric thread		General pitch thread		Whitworth thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	0.5~6	0.5~6	0.5~5	0.5~5	8~16	8~16
Page	A311	A312	A313	A313	A314	A314

Right hand type shown

	Unified thread		British taper pipe thread		American taper pipe thread	
	External thread	Internal thread	External thread	Internal thread	External thread	Internal thread
Pitch/ Number of pitch	8~24	8~24	11~28	11~28	8~27	8~27
Page	A315	A315	A316	A316	A317	A317

Tool holders for external turning

D-type clamping system

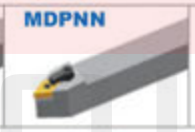
	DCLNR/L	DDJNR/L	DSBNR/L	DTGNR/L	DVVNN	DVJNR/L	DWLNR/L
							
Approach angle	95°	93°	75°	91°	72°30'	93°	95°
Page	A136	A137	A138	A139	A140	A140	A141

P-type clamping system

	PCBNR/L	PCLNR/L	PDJNR/L	PDPNN	PSBNR/L	PSDNN	PSKNR/L
							
Approach angle	75°	95°	93°	62°30'	75°	45°	75°
Page	A142	A143	A144	A145	A146	A147	A148

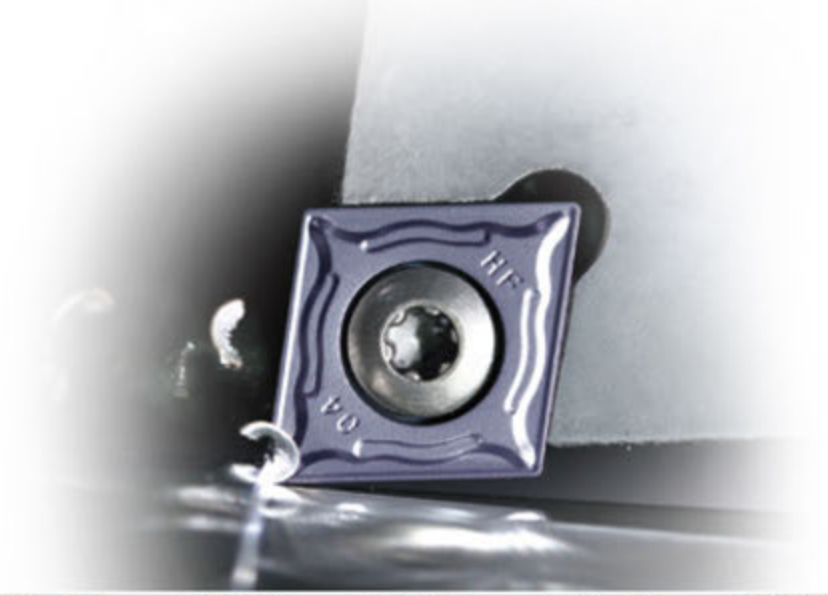
	PSSNR/L	PTFNR/L	PTTNR/L	PTGNR/L	PWLNR/L
					
Approach angle	45°	91°	60°	90°	95°
Page	A149	A150	A151	A152	A153

M-type clamping system

	MCBNR/L	MCLNR/L	MDJNR/L	MDPNN	MSBNR/L	MSRNR/L	MSKNR/L
							
Approach angle	75°	95°	93°	62°30'	75°	45°	75°
Page	A154	A155	A156	A157	A158	A159	A160

	MSDNN	MTGNR/L	MTJNR/L	MTJNR/L-Z	MTFNR/L	MVVNN	MVJNR/L
							
Approach angle	45°	90°	93°	93°	91°	72°30'	93°
Page	A161	A162	A163	A164	A165	A166	A167

	MWLNR/L
	
Approach angle	95°
Page	A168



S-type clamping system

	SCACR/L	SCLCR/L	SDACR/L	SDJCR/L	SDNCN	SVJBR/L	SVABR/L
							
Approach angle	90°	95°	90°	93°	62°30'	93°	90°
Page	A169	A170	A171	A172	A173	A174	A175

	SVVBN	SVVCN	SVJCR/L	SSBCR/L	SSDCN	SSKCR/L	SSSCR/L
							
Approach angle	72°30'	72°30'	93°	75°	45°	75°	45°
Page	A176	A177	A178	A179	A180	A181	A182

	STACR/L	STFCR/L	STGCR/L	SRDCN	SRGCR/L
					
Approach angle	90°	91°	91°		
Page	A183	A184	A185	A186	A187

Turning tool holders for internal machining

P-type clamping system

PCLNR/L	PDPNR/L	PDUNR/L	PSKNR/L	PTFNR/L	PWLNR/L
					
Approach angle 95°	62°30'	93°	75°	90°	95°
Page A194	A195	A196	A197	A198	A199

S-type clamping system

SCLCR/L	SDQCR/L	SDUCR/L	SDZCR/L	SSKCR/L	STFCR/L	SVQCR/L
						
Approach angle 95°	107°30'	93°	93°	75°	91°	107°30'
Page A200	A201	A202	A203	A204	A205	A206

SVUCR/L	SVQBR/L	SVUBR/L	SCLPR/L	SDQPR/L	SDUPR/L	STUPR/L
						
Approach angle 93°	107°30'	93°	95°	107°30'	93°	93°
Page A207	A208	A209	A210	A211	A212	A213

SCFCR/L	SCLCR/L
	
Approach angle 90°	95°
Page A214	A215

Damping tool holders

SCLPR/L	SDQPR/L	SDUPR/L	STUPR/L	SVQCR/L	SVUCR/L
					
Approach angle 95°	107°30'	93°	93°	107°30'	93°
Page A217	A218	A219	A220	A221	A221

Parting and grooving tools

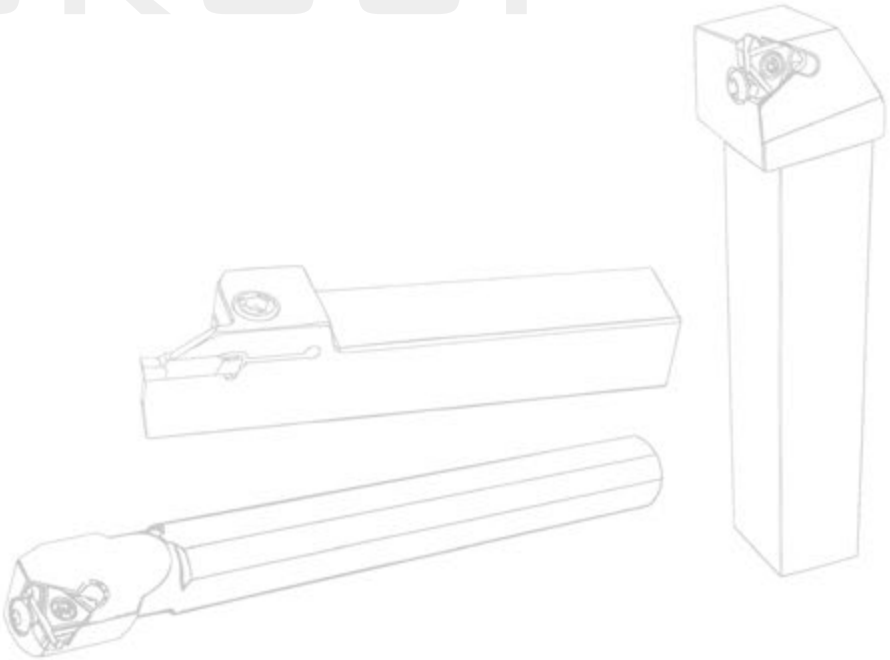
QE□□R/L	QECDR/L	QX□DR/L	QE□SR/L	QE□S□□N	QZS□	QF□□R/L
						
Page A256-257	A257	A258	A258	A259	A259	A260-261

QF□□RR/LL	QF□DR/L	C□□□-Q□DR/L	C40X-Q□DR/L	GED□□R/L	GFD□□RR/LL	GFD□□R/L
						
Page A262-265	A266-267	A268	A268	A269-271	A272-275	A276-277

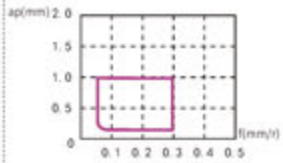
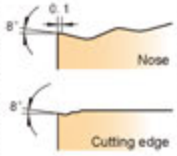
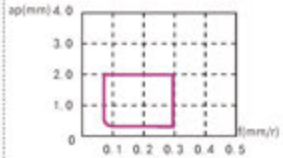
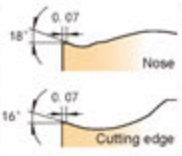
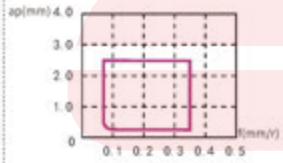
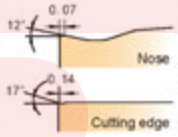
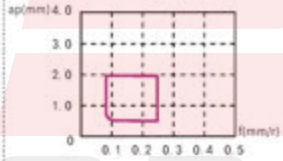
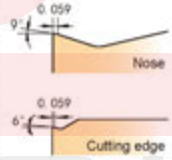
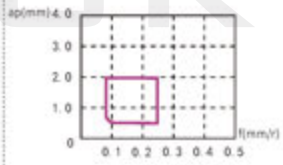
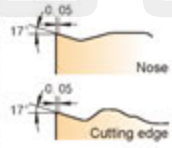
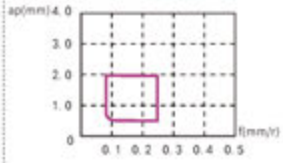
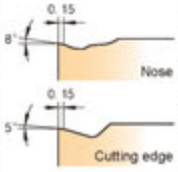
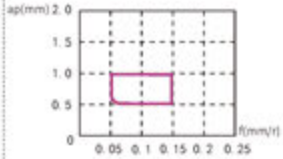
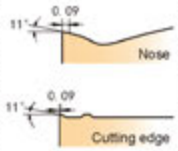
GID□□R/L	QZQ□□R/L	GQCR/L	S□□□-QC□□□□R/L
			
Page A278	A282	A280	A280

Threading tools

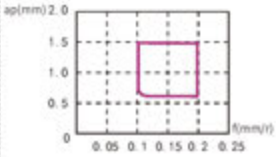
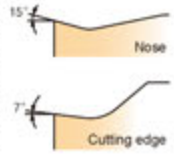
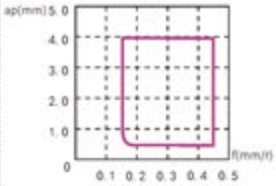
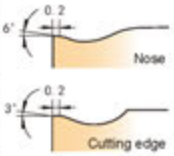
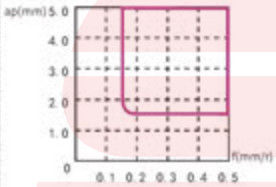
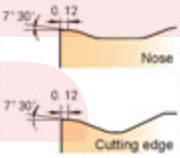
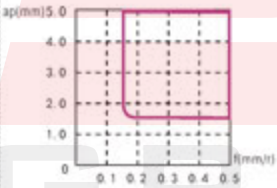
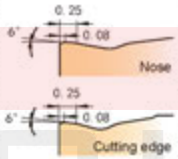
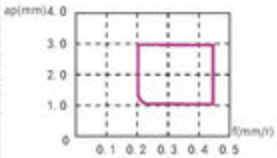
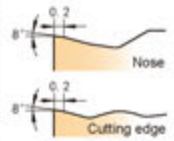
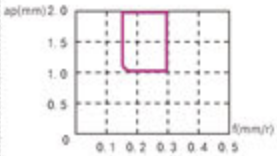
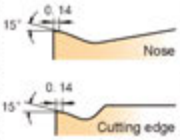
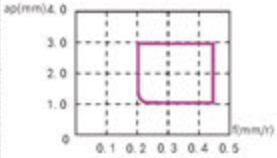
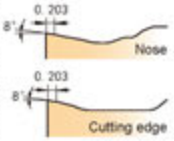
ZSER/L	ZSIR/L	SWR/L	SNR/L
			
Page A308	A309	A319	A320



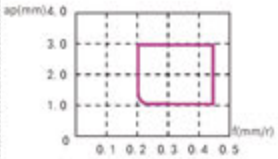
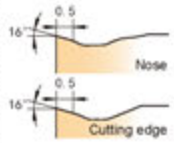
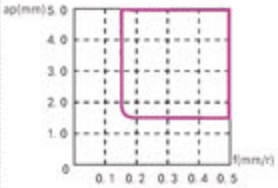
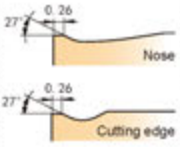
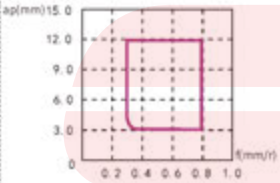
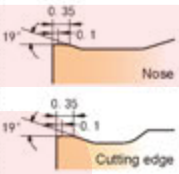
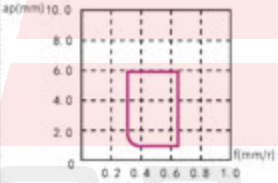
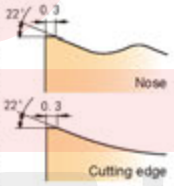
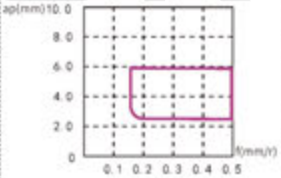
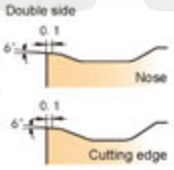
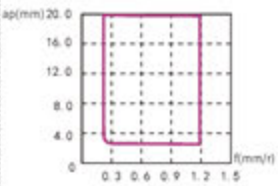
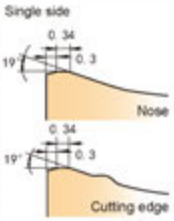
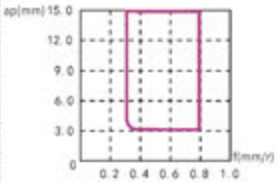
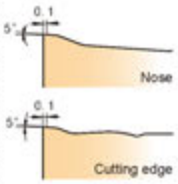
Negative inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For finishing	**SF** 	M			**Recommended chipbreaker for finishing of P-type mild steel** Double-sided chipbreaker with M-level tolerance has outstanding perfprmance in finishing, achieving good surface quality. 
	XF 	M			**Recommended chipbreaker for finishing of P-type materials** The curved edge angle ensures the strength of the cutting edge, effectively reduces the cutting resistance, and the special chipbreaker design can ensure the chip control performance in the finishing range. 
	DF 	M			**Recommended chipbreaker for finishing of P-type materials** Double-sided chipbreaker with M-level tolerance has sharp edges, which can effectively cut off stainless steel and avoid adhering and surface hardening, achieving high surface quality. 
	EF 	M			**Recommended chipbreaker for finishing of M-type materials** Double-sided chipbreaker with M-level tolerance can prevent wear and harding to achieve high machining precision and good surface quality. 
	ES 	M			**Brand new recommended chipbreaker for M-type material finishing** Sharp large rake angle design reduces cutting resistance with a good machining surface quality. The unique chipbreaker structure realizes good chip control and reduces cutting heat. 
	ADF 	G			**Recommended chipbreaker for M-type material universal finishing** G-level tolerance. High dimensional and repeatable positioning accuracy can be obtained. Special design of the rake face structure ensures the strength of the insert meanwhile greatly reduces the cutting resistance. Advanced technology for edge treatment process and coating post-treatment ensure machining parts with excellent surface finish. 
	NF 	E			**Recommended chipbreaker for finishing of S-type materials** Double-sided chipbreaker with E-level tolerance can prevent wear and harding to achieve high machining precision and good surface quality. 

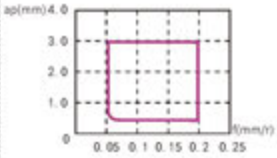
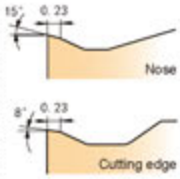
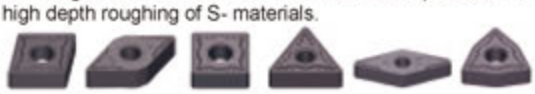
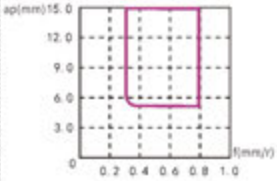
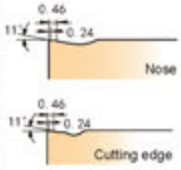
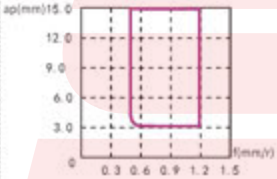
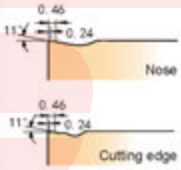
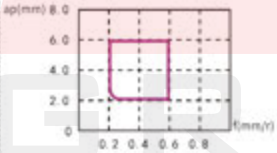
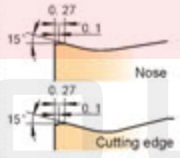
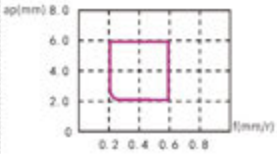
Negative inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For finishing	NGF 	E			**Recommended chipbreaker for finishing of S-materials** E-level double side chipbreaker with excellent sharp type edge. High positioning accuracy, light cutting force, which is recommended chip breaker for S-type material general finishing. 
For semi-finishing	XM 	M			**Recommended chipbreaker for semi-finishing of P-type materials** Special cutting edge structure, taking into account cutting sharpness and insert strength, the newly designed chipbreaker, to ensure the chip control performance in the semi-finishing range. 
	DM 	M			**Recommended chipbreaker for semi-finishing of P-type materials** Double-sided chipbreaker with M-level tolerance produces small cutting forces and has large chip breaking range, which ensures good performance for machining highly adhesive alloy steel. 
	PM 	M			**Recommended chipbreaker for semi-finishing of P-type materials** Double-sided chipbreaker with M-level tolerance has higher strength of cutting edge than chipbreaker DM. It is suitable for semi-finishing under unstable working conditions as well as machining cast iron with small cutting forces. 
	EH 	M			**Brand new recommended chipbreaker for M-type material semi-finishing** M-level tolerance. Double positive rake angle take into account the sharpness and strength of the tool tip. Suitable for efficient machining of stainless steel in intermittent working conditions. 
	NM 	M			**Recommended chipbreaker for semi-finishing of S-type materials** Double-sided chipbreaker with M-level tolerance keeps high precision after inserts are turned, with good capability to prevent wear and hardening to achieve higher machining efficiency than chipbreaker NF. 
	EM 	M			**Recommended chipbreaker for semi-finishing of M-type materials** Double-sided chipbreaker with M-level tolerance can solve the processing problems such as chip breaking and adhering of stainless steel, achieving higher machining efficiency than chipbreaker EF. 

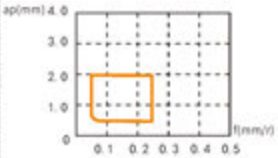
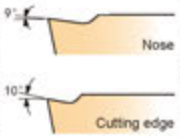
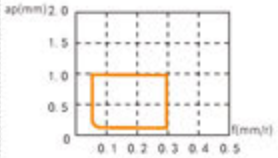
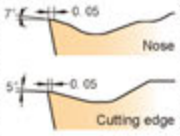
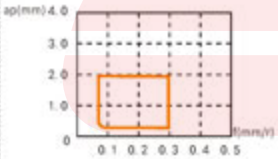
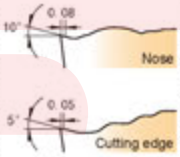
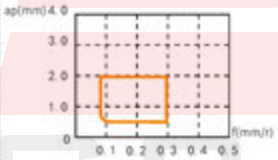
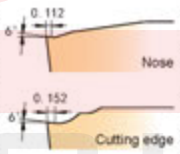
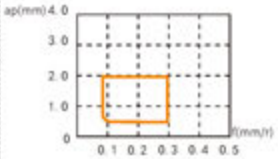
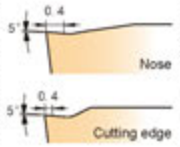
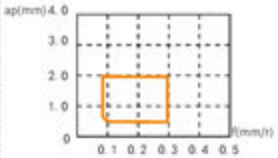
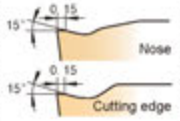
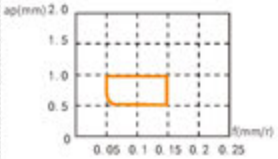
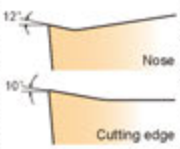
Negative inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For semi-finishing	EG 	M			**Recommended chipbreaker for M-type material universal machining** M-level tolerance. Reasonable chipbreaker design realizes good chip control. Sharp rake angle effectively suppresses burr generation. 
	All round 	M			**From semi-finishing to roughing of P-type,M-type,K-type materials** Double-sided chipbreaker with M-level tolerance has good cutting edge strength and wide application. 
Light-load roughing	DR Double-side 	M			**Recommended chipbreaker for light roughing of P-type and K-type materials** Double-sided chipbreaker with M-level tolerance is the first choice for light roughing, can achieve high evacuation rate and effciency of cutting edge. 
	LR Single-side 	M			**Recommended chipbreaker for light-load roughing of P-type materials** Single-sided general chipbreaker with M-level tolerance, has wide chip breaking range and sharp cutting edge is designed with inclined angle, which enables it to cut lightly and easily and control the chip flow direction. Chip-leaded-stages can reduces the contact area with chips, so that heat can easily be dissipated. 
For roughing	ER Single/ Double side 	M			**Recommended chipbreaker for roughing of M-type materials** Single / double-sided chipbreaker with M-level tolerance has good capacity of impact-resistance. It is designed to achieve balance between security and sharpness of the cutting edge, and it can achieve high effciency by preventing the problems of adhering and high cutting heat when roughing stainless steel. 
					
	DR Single-side 	M			**Recommended chipbreaker for roughing of P-type materials** Single-sided chipbreaker with M-level tolerance has high security of cutting edge, which can achieve high feed rate and low cutting forces at great cutting depth and high feed rate. 

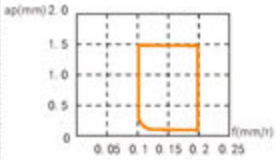
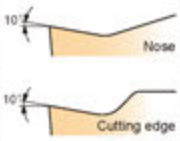
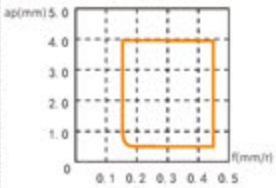
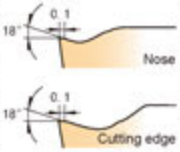
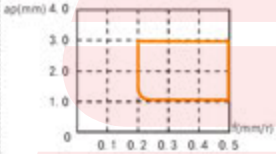
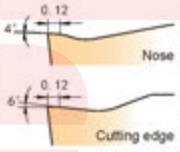
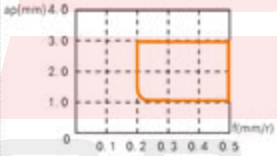
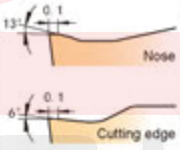
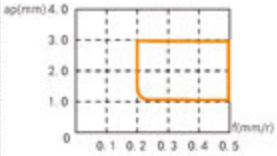
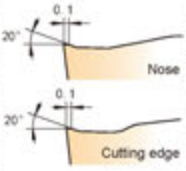
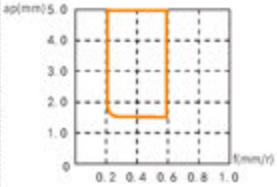
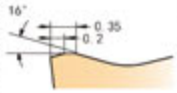
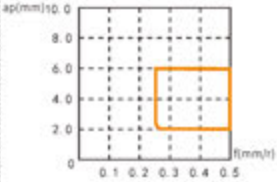
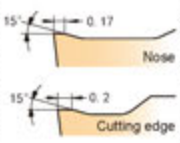
Negative inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For roughing	**SNR** 	M			**Recommended chipbreaker for S-type material high effciency roughing** M-level double-sided chipbreaker perfectly combines sharpness and strength of the cutting edge, with small cutting resistance and high edge strength can effectively reduce groove wear. SNR is recommended chipbreaker for high depth roughing of S- materials. 
Heavy-load machining	**HDR** Single-side 	M			**Recommended chipbreaker for heavy load machining of P-type materials** M level single-sided chipbreaker with strengthen cutting edges, high safety and excellent plastic deformation resistance under high metal removal rate. 
	HPR Single-side 	M			**Recommended chipbreaker for heavy-load machining of P-type materials** Single-sided chipbreaker with M-level tolerance, strong cutting edge. Multi-stages chipbreaker ensures the flowing of chip and heat dissipation of insert. It is suitable for machining under unstable and relatively bad working condition, especially for external roughing of workpiece with a rough oxidized surfaces. 
Cast iron machining	**TC** 	M			**Universal chipbreaker for K-type material machining** M-level tolerance. High edge strength, excellent impact resistance and stable performance, which is suitable for cast iron material finishing to rough machining occasions. 
	Without chipbreaker 	M			**For cast iron machining** Double-sided chipbreaker with M-level tolerance has high cutting edge strength. It can overcome inferior factors such as intettruption and vibration, etc. when machining cast iron. 

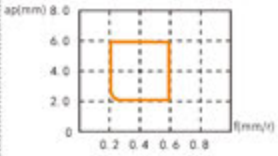
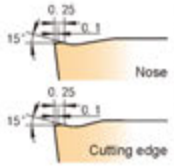
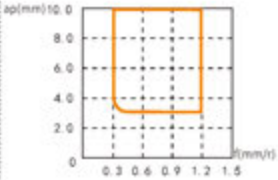
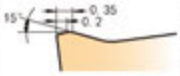
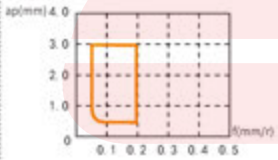
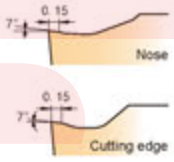
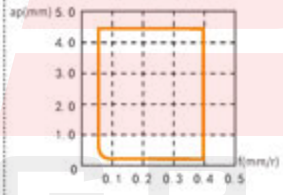
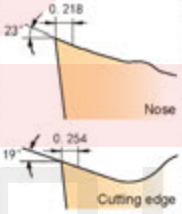
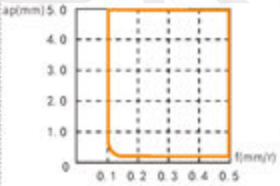
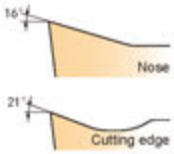
Positive inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For extra finishing	R/L 	G			**Recommended chipbreaker for precise boring inserts** G-level tolerance, sharp cutting edge and small nose radius, it can effectively reduce the vibration in machining and is suitable for boring and external turning. 
For extra finishing	SF 	G			**First choice for finishing with high requirements on chipbreaker** G-level tolerance, it is the first choice for precise fnishing due to its excellent performance on chip breaking. 
For finishing	XF 	M			**Recommended chipbreaker for finishing of P-type materials** The curved edge angle ensures the strength of the cutting edge, effectively reduces the cutting resistance, and the special chip breaking groove design can ensure the chip control performance in the finishing range. 
	HF 	M			**Chipbreaker for fnishing with wide application** M-level tolerance, it is suitable for internal and external fnishing of various materials such as steel and cast iron. 
	EF 	M			**Recommended chipbreaker for finishing of M-type materials** M-level tolerance, it has sharp cutting edges and is suitable for cutting adhesive materials such as stainless steel, soft steel, etc. 
	AHF 	G			**Recommended chipbreaker for M-type material universal finishing** G-level tolerance. High dimensional and repetitive positioning accuracy can be obtained. Unique vibration-damping chipbreaker design realizes good surface quality even when machining long and thin shaft parts. 
	NF 	E G			**Recommended chipbreaker for finishing S-type materials** E and G-level tolerance and sharp cutting edges, it is suitable for internal and external finishing of high-temperature alloy materials. 

Positive inserts with hole

Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For finishing	NGF 	E G			**Recommended chipbreaker for S-type material general finishing** E, G-level tolerance, for inner hole fnishing of S-type materials. 
For semi-finishing	XM 	M			**Recommended chipbreaker for semi-finishing of P-type materials** Special cutting edge structure, taking into account cutting sharpness and insert strength, the newly designed chipbreaker, to ensure the chip control performance in the semi-finishing range. 
	HM 	M			**Chipbreaker for semi-finishing with wide application** M-level tolerance, it is suitable for internal and external semi-finishing of materials like steel, cast iron, etc. 
	EM 	M			**Recommended chipbreaker for semi-finishing of M-Type materials** M-level tolerance, it has higher hardness of cutting edge than EF and can achieve higher effciency. 
	EG 	M			**Recommended chipbreaker for M-type material universal machining** M-level tolerance. Reasonable chipbreaker design realizes good chip control. Sharp rake angle effectively suppresses burr generation. 
	All round 	M			**Recommended chipbreaker for semi-finishing of M-type materials** M-level tolerance, it is suitable for profle machining materials like steel, cast iron, etc. 
For roughing	HR 	M			**General chipbreaker for roughing** M-level tolerance, it is suitable for both internal and external roughing of materials such as steel, stainless steel, cast iron, etc. 

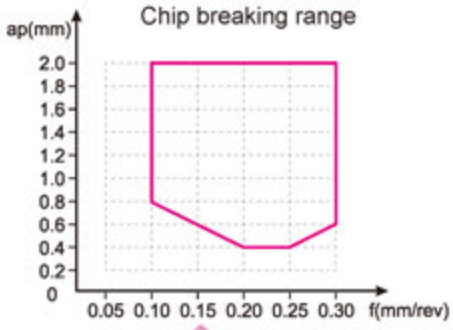
Positive inserts with hole

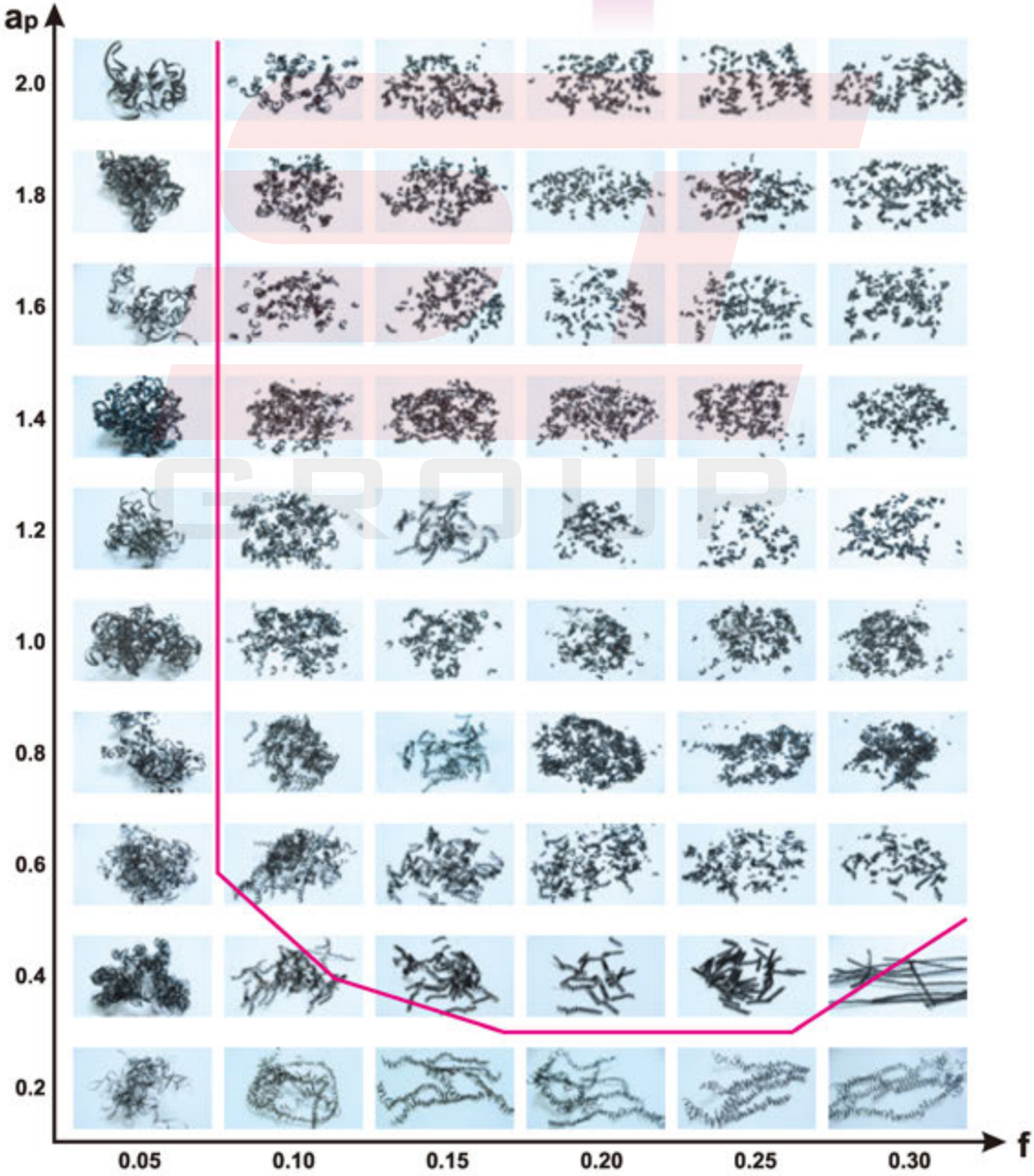
Application	Chipbreaker	Precision	Recommended cutting parameters	Chipbreaker profile	Feature / Shape of insert
For roughing	TC 	M			**Universal chipbreaker for K-type material machining** M-level tolerance. High edge strength, excellent impact resistance and stable performance, which is suitable for cast iron material finishing to rough machining occasions. 
	Special chipbreaker 	M			**Recommended chipbreaker for heavy machining of P-type materials** Single-sided with M-level tolerance, it has good cutting edge strength with high security. It is the first choice for profle roughing. 
	SNR 	M			**Recommended chipobreaker for S-type material high effciency roughing** M-level tolerance, for inner hole roughing of S materials. 
For Al machining	LC 	G			**Chipbreaker for machining of Al alloy** G-level tolerance, large rake angle and clearance angle make the cutting edge sharper, ensuring easy and fast cutting while remaining effective chip breaking. 
	LH 	G			**Special chipbreaker for machining of Al alloy** G-level tolerance, large rake angle and polishing treatment on surface, it can effectively prevent built-up edge and achieve high workpiece surface quality while maintaining long life. 

Cutting test for chip breaking range of general turning inserts

Case

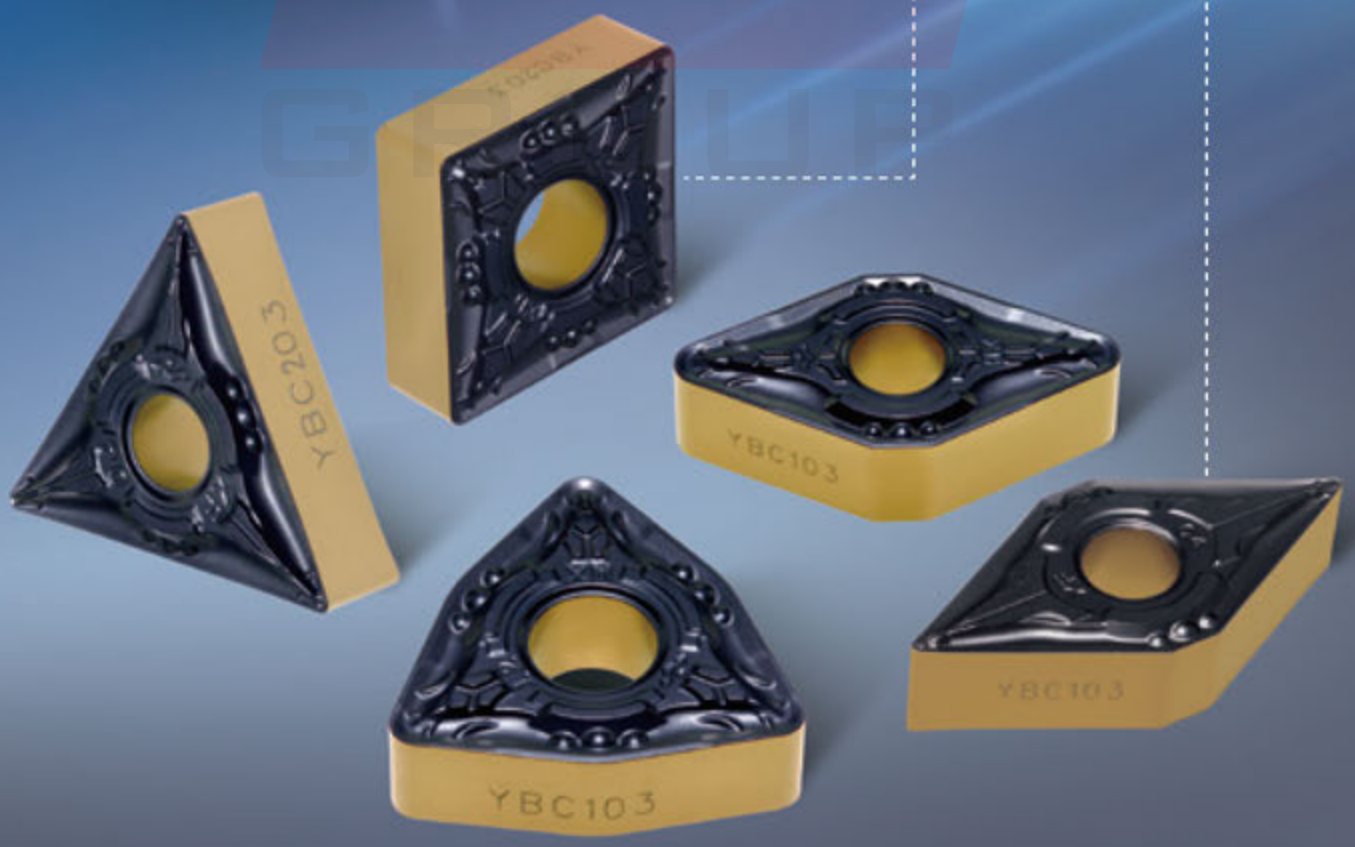
Insert: CNMG120408-DF
Toolholder: PCLNL2525M12
Workpiece material: 45# steel
Cutting speed: 200m/min

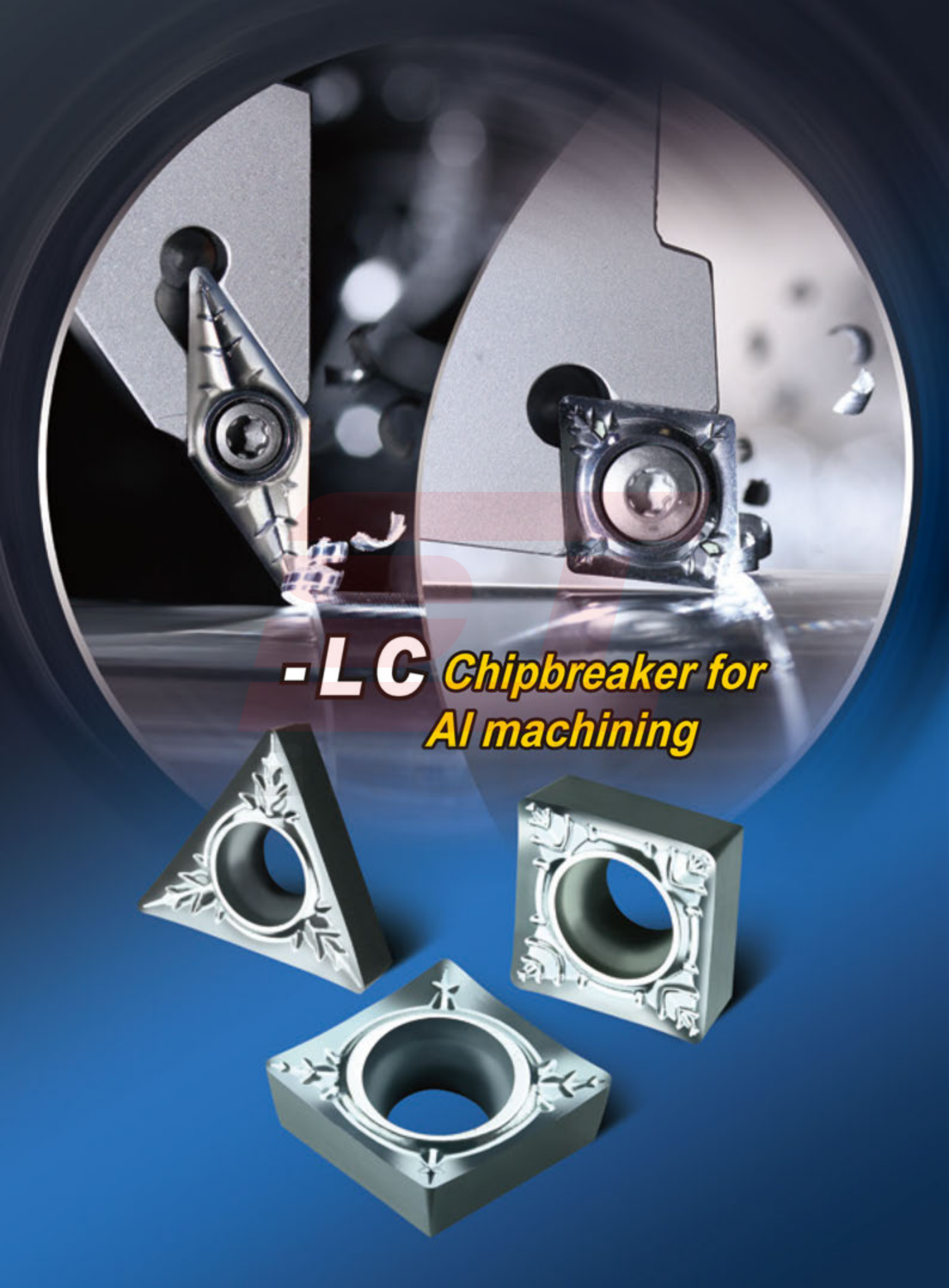




New turning grade for P-type materials

YBC103
YBC203




-LC Chipbreaker for
Al machining


-HPR
New generation of
roughing chipbreaker
-LR

YBM215

Outstanding wear resistance, extends the tool life
achieves high efficient processing

Grade for stainless steel machining

YBM153

Best choice for cutting stainless steel
with high speed under good working condition

ISO		General turning						Threading	Parting and grooving		
Code		Coating		Cermet	Coated cermet	Ceramic	Cemented carbide	Coating	Coating		Cemented carbide
		CVD	PVD					PVD	CVD	PVD	
P Steel	01										
	10	YBC152 YBC103	YBG102	YNG151	YNG151C			YBG202		YBG205	
	20	YBC252 YBC203	YBG202					YBG203		YBG302	
	30	YBC352									
	40										
M Stainless steel	01										
	10	YBM153	YBG202	YNG151	YNG151C			YBG202		YBG205	
	20	YBM251	YBM215 YBG205					YBG203		YBG302	
	30	YBM253									
	40										
K Cast iron	01										
	10	YBD052		YNG151	YNG151C	CN3100	YD201	YBG202		YBG205	YD201
	20	YBD102						YBG203		YBG302	
	30	YBD152									
N Non ferrous metal	01										
	10						YD101	YBG202			YD101
	20							YBG203			
	30										
S Heat resistant alloy & Ti alloy	01										
	10		YBS103 YBG102			CN3100	YD101	YBG202		YBS103 YBG102	YD101
	20		YBG105 YBG212 YBG202					YBG203		YBG105 YBG302 YBG212 YBG202	
	30										
H Super hard material	01										
	10					CN3100		YBG202			
	20							YBG203			
	30										

How to select general turning inserts

Turning inserts list

- Turning inserts listed according to shape
- Sequence of listed inserts:
  - ▸Negative inserts (with hole – without hole)
  - ▸Positive inserts (with hole – without hole)
- Sequence of listed chipbreaker
  For finishing – For semi-finishing – For roughing – For heavy cutting – Without chipbreaker– Through chipbreaker

Selecting grade according to workpiece material and working condition

Prior to select grade for insert according to working condition that is suitable for workpiece material

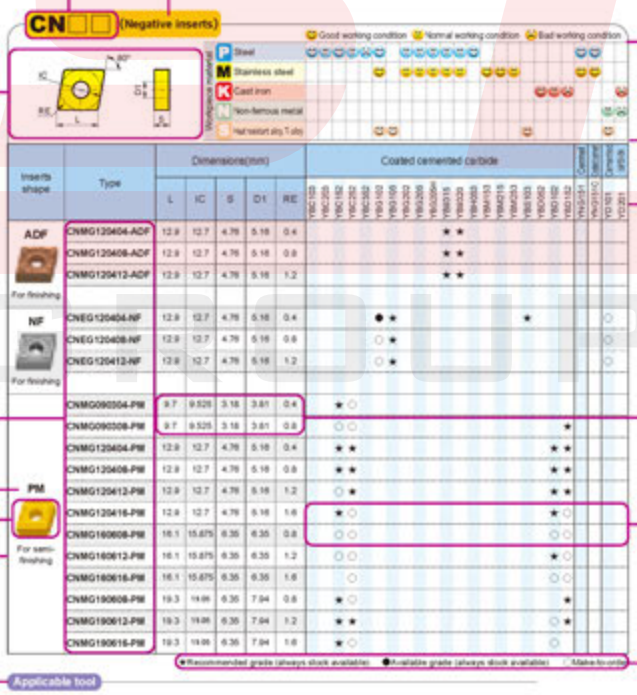
😊 Good working condition: machine works well and stably. There are high requirements for dimensional precision of components and quality surface.

😐 Normal working condition: machine works normally. There are certain requirements for dimensional precision of components and surface quality.

☹ Bad working condition: machine works with bad stability. There are high requirements for metal evacuation rate.

Main category of products

Positive or negative inserts



Shape and dimensions

L: Cutting edge length

IC: Diameter of inscribed circle

S: Thickness

D1: Hole diameter

RE: Nose radius

Grade

Type

Size

Stock

Illustration of stock

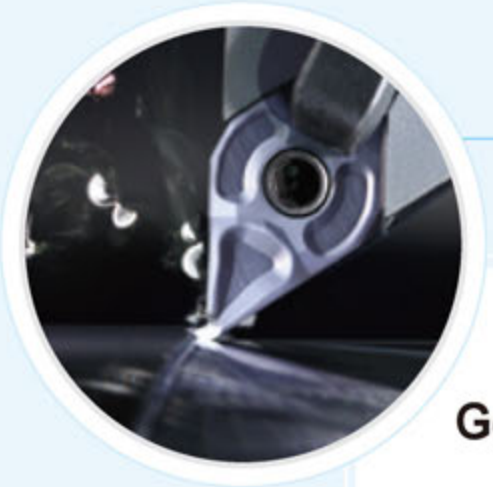
Reference page of tool holders

Application of inserts

Shape

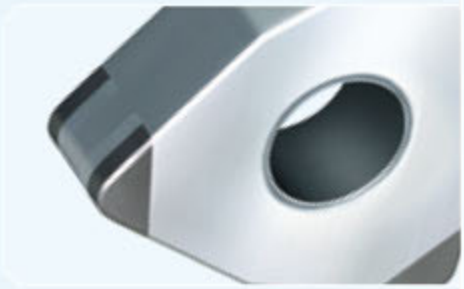
Insert chipbreaker
Chipbreaker code

Recommended cutting parameters
Chipbreaker selection reference
Grade selection reference
Insert code key



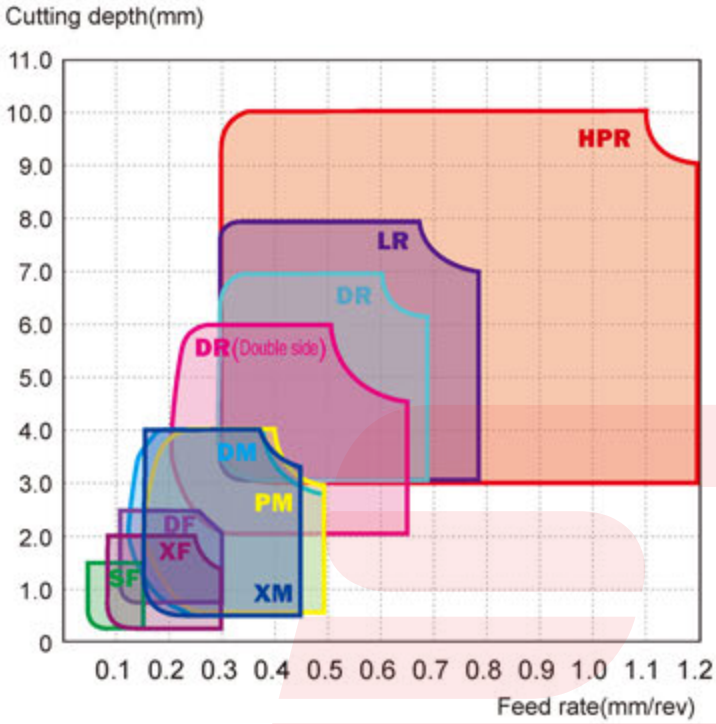
TURNING A

General turning inserts

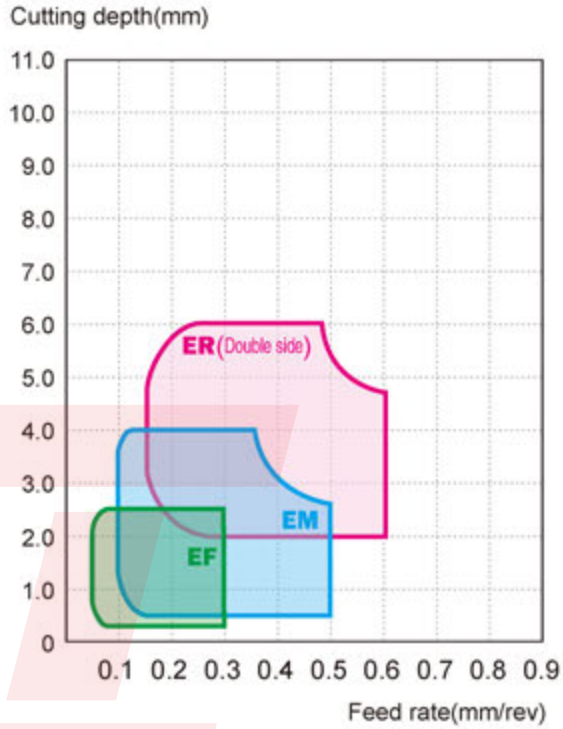


Chip breaking range reference for general turning inserts

Negative inserts

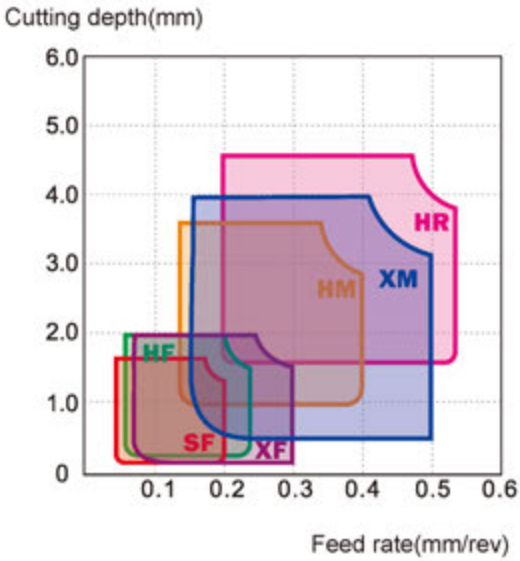


▶ Workpiece material: 45# steel

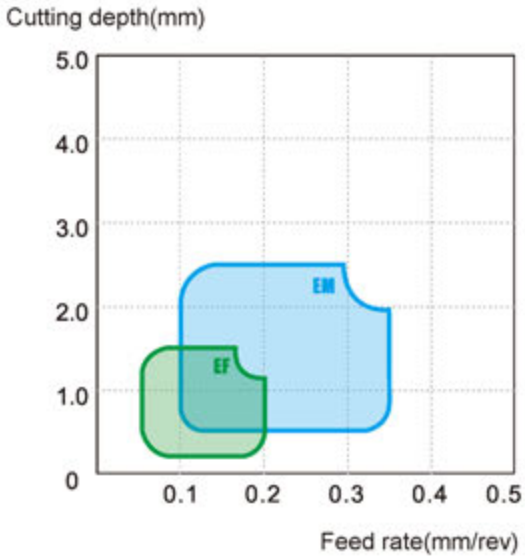


▶ Workpiece material: stainless steel (1Cr18Ni9Ti)

Positive inserts



▶ Workpiece material: 45# steel



▶ Workpiece material: stainless steel (1Cr18Ni9Ti)

-LC chipbreaker for aluminum

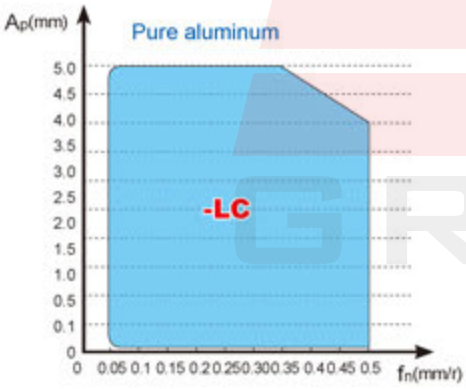
- -LC inserts are designed with a special chipbreaker. Large rake angle and clearance angle make the cutting edge sharper, ensuring easier cutting while remaining effective chip breaking.
- Achieved the mirror rake face after special treatment. Reduced the friction resistence, and stick free. Accordingly, make the chip removal fluently and improve the surface quality and tool life.
- The G-class tolerance of insert, higher Repeated Position Accuracy, at the same time, it can effectively avoid the vibration during the machining process.

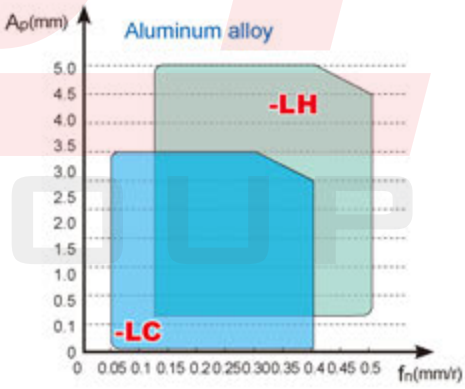
Optimized inclined angel makes controlling the chipping flow direction valid.

Smooth connection of insert nose and cutting edge makes rake face smoother.

–LC and –LH chipbreaker characteristics and machining range

-LC chipbreaker can be used in machining of pure Al, while -LH chipbreaker can not.
-LC chipbreaker expand the chip breaking range of Al alloy machining.





Workpiece material: Pure aluminum

Cutting parameters	Vc=350m/min Ap=0.2mm F=0.2mm/r	
Chips		
Surface quality		
	-LC chipbreaker	Similar products from overseas manufacturers

- **-LH chipbreaker is more suitable for machining aluminum alloy in condition of large cutting depth and high feed rate.**
- **-LC chipbreaker is more suitable for machining aluminum alloy in condition of small cutting depth and low feed rate.**
- **-LC chipbreaker can be used in machining pure aluminum.**

-EF -EM -ER

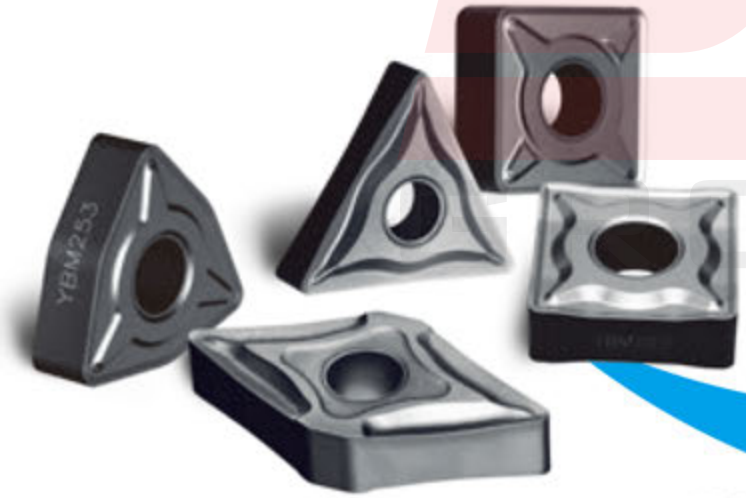
Specially designed for machining intensively adhesive and high-plasticity materials such as stainless steel, etc

-EF

Rake angle and inclined angle are specially designed for intensively adhesive stainless steel and high-plasticity materials which are hard to be machined. Sharp cutting edge enables it to cut lightly and easily and achieve good surface quality by well controlling chip breaking. It is especially suitable for finishing these kinds of materials.

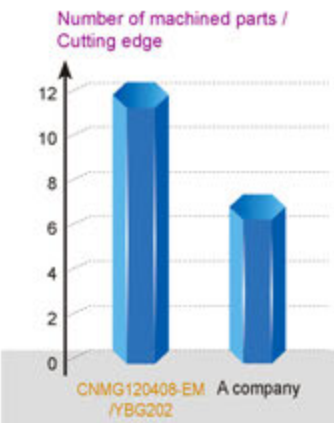
-EM

Inserts meet the requirements of machining intensively adhesive materials. Impact resistance of cutting edge is improved in addition to sharpness, which makes it suitable for semi-finishing and intermittent machining of adhesive materials such as austenitic stainless steel, etc.



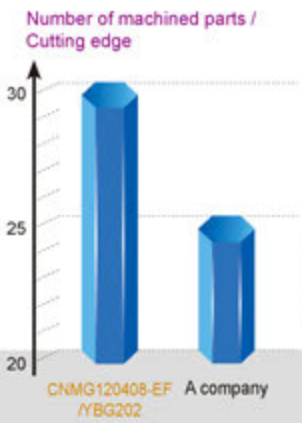
-ER

Specially designed double rake angle with wide land achieves balance between edge security and sharpness, and effectively reduces cutting resistance and wear on groove.

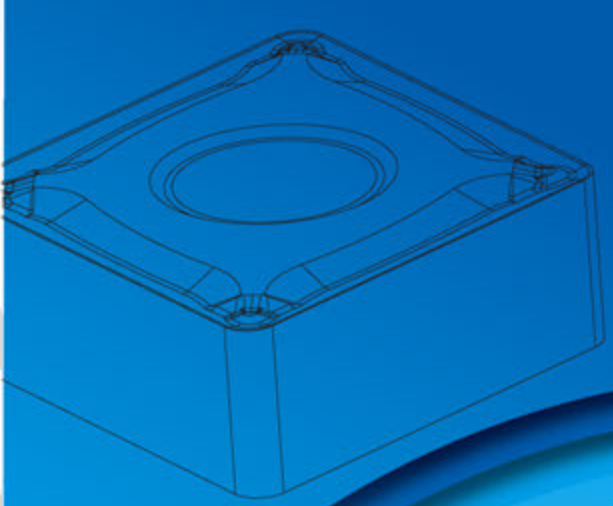


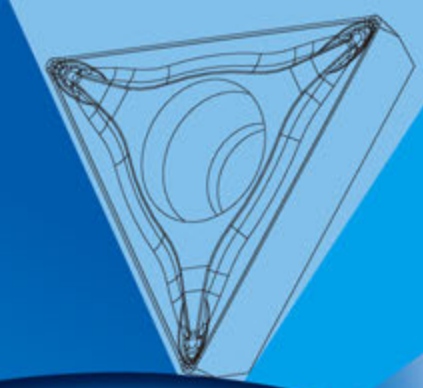
Machining external of valve

Machining end surface of valve
(intermittent machining)
Workpiece diameter:135mm
Rotating speed:350rpm
Feed rate:0.25mm/r
Cutting depth:1.5mm



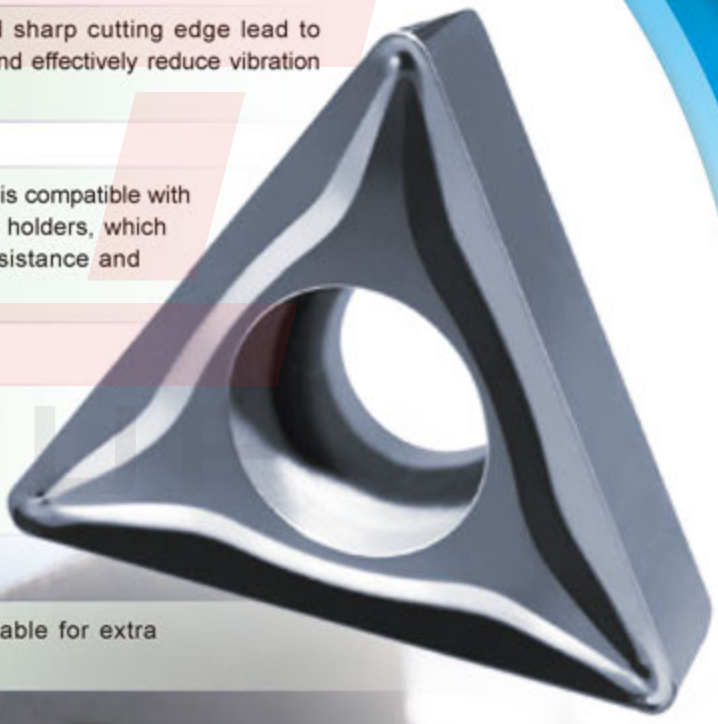
Machining external of valve
Workpiece diameter:89mm
Rotating speed:635rpm
Feed rate:0.15mm/r
Cutting depth:1.0mm





-SF Chipbreaker for finishing

- Unique nose design and sharp cutting edge lead to small cutting resistance and effectively reduce vibration of the tool holder.
- With high re-positioning precision, the insert is compatible with specially developed cemented carbide tool holders, which can increase the capability of vibration resistance and improve machining quality.
- Special treatment on insert's surface can reduce the possibility of chips adhering to the rake face of insert. Good performance of chip breaking and chip flowing ensures improved surface quality of workpiece.
- By adopting excellent grade, it is suitable for extra finishing of various materials.



S- Ni-based Superalloy Machining

Difficulties Overcame

Features of Ni-based superalloy machining

- High cutting resistance (containing a large amount of alloying elements, severe hardening, great plastic deformation;
- High cutting temperature;
- Severe wear of inserts.

Chipbreaker for machining of Ni-based superalloy should have tough and sharp insert nose, smooth rake face and proper inclination angle.

-NM for semi-finishing **-SNR** for high efficiency roughing
-NF for finishing **-NGF** for general finishing

-SNR Chipbreaker for roughing with large depth of cut

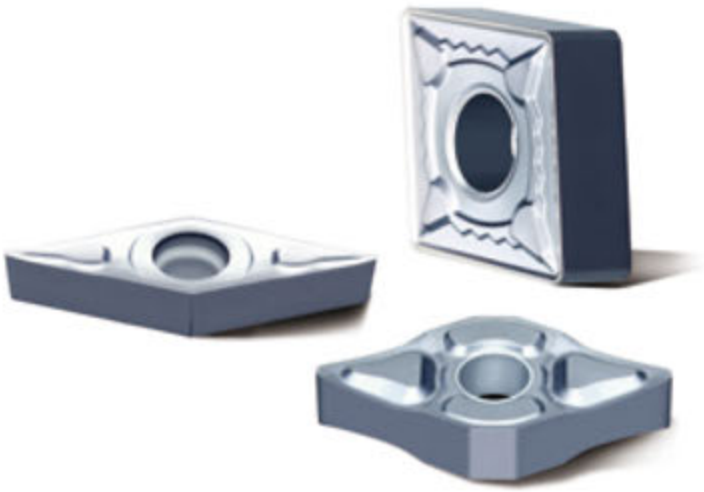
- Positive rake angle design, sharp cutting edge, low cutting resistance, effectively reducing groove wear;
- Cutting edge with variable rake angles increase cutting edge strength at large depths of cut. Edge strength increases as the depth of cut increases;
- Large slot width combined with unique edge rib design not only provides excellent chip breaking performance but also can effectively improve edge strength.

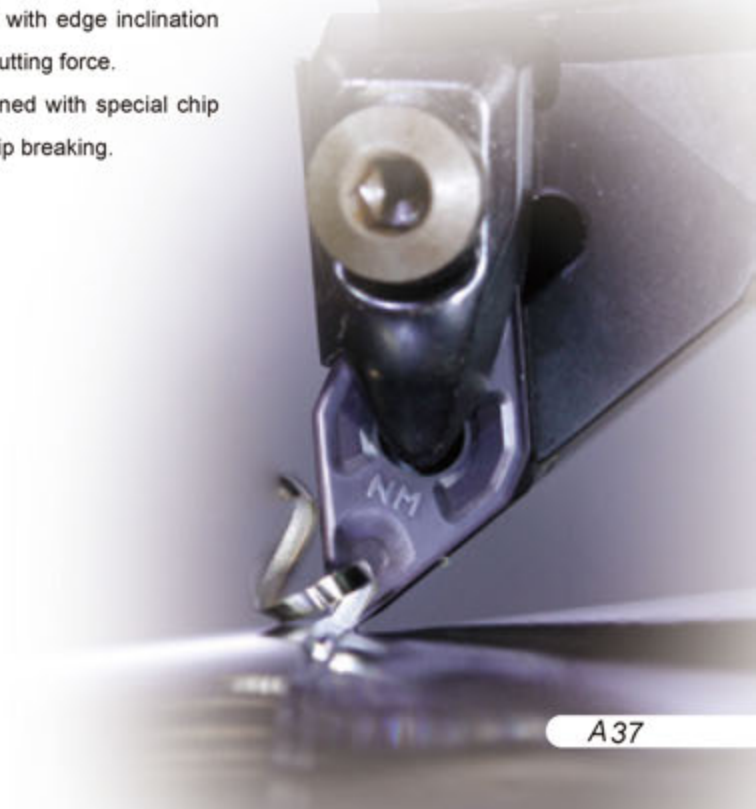
-NGF Chipbreaker for General Finishing

- Proper inclination angle design, sharp cutting edge, small cutting resistance;
- E-level tolerance of insert, high clamping accuracy, proper chipbreaker width, good chip breaking performance, excellent surface quality;
- Special edge treatment, high wear resistance.

-NF/NM Chipbreaker for General Finishing

- The chipbreaker have smooth surface and smooth chip guide.
- The cutting edge is specially treated, strong and sharp, with high wear resistance.
- -NF chipbreker large front angle design, combined with edge inclination and special edge design, sharp cutting edge, small cutting force.
- -NM chipbreaker double front angle design, combined with special chip cutting groove design, high cutting strength, good chip breaking.





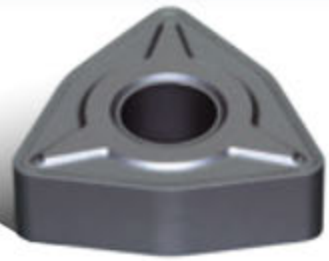
BLACK DIAMOND INSERTS

Innovation of machining techniques for stainless steel turning

YBM

Coated Cemented Carbide CVD

YBM153



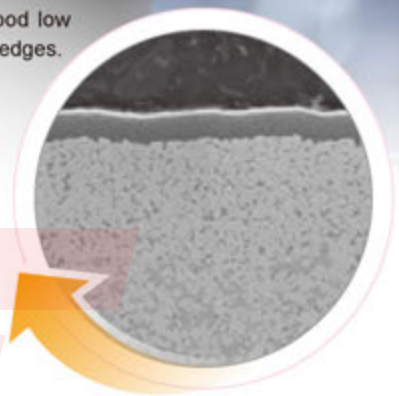
Best choice for roughing of stainless steel with high-speed under good working condition

Coating

- CVD coating with advanced ultra-fine grain coating technology, greatly improves wear resistance of inserts.
- Thanks to special treatment on transition layer, multi-layer coating are combined firmly.
- The exceptionally smooth coating surface and good low friction ability can reduce the occurrence of built-up edges.

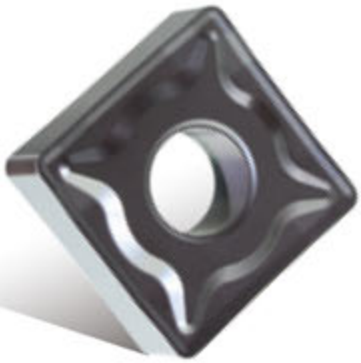
Substrate

- Added with resist high temperature rare element, inserts shows a good capability against plastic deformation and good capability of Red Hardness.
- Unique manufacturing technology improves high temperature toughness and wear resistance of substrate.



Application fields: YBM153 is suitable for finishing and semi-finishing of stainless steel with high cutting efficiency under stable working condition. Such as medium-size fluid valve components in petrochemical industry, flange and other parts in auto pipeline, valve and valve body in auto engine systems, ship mechanical parts, aviation hydraulic parts, adapting pieces in IT and semiconductor industry, medium and long-axis in food processing machinery, construction machinery and general machinery.

YBM253



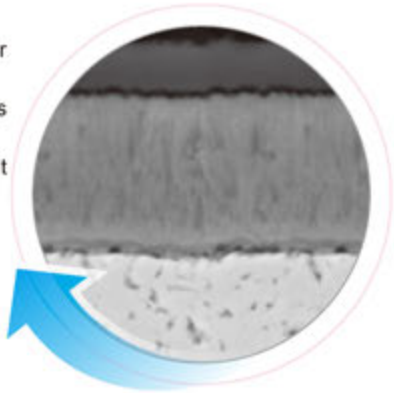
Ideal grade for turning of stainless steel with high cutting depth and high feed rate under bad working condition

Coating

- Ultra-fine grain coating technology provides better wear resistance and toughness;
- Improved remain internal stress design ensures good toughness and anti-cracking performance;
- Polishing treatment on coating surface makes it suitable for cutting adhesive materials.

Substrate

- With gradient carbide substrate insert has better impact resistance and cutting edge strength.



Application fields: YBM253 grade is suitable for roughing of heavy stainless steel parts with high cutting depth and high feed rate under the condition with great impact.




Second generation of YBC

BLACK DIAMOND INSERTS

Achieving both higher cutting speed and longer tool life

YBC152

Thick TiCN and thick Al_2O_3 coatings improve the impact toughness and abrasion resistance, which makes it suitable for finishing and semi-finishing of steel at high speed. Cutting speed can increase by more than 25%, while the tool life can increase by more than 30% at the same cutting speed.

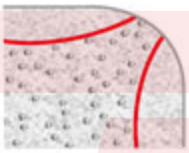
YBC252

Comprising of thick TiCN and thick Al_2O_3 coatings, the grade has high capability against plastic deformation and good hardness of cutting edge. It is preferred grade for machining of steel from finishing to roughing. Under the same cutting conditions, the cutting speed can be increased by more than 25%, while the tool life can be 30% longer under the same cutting speed.

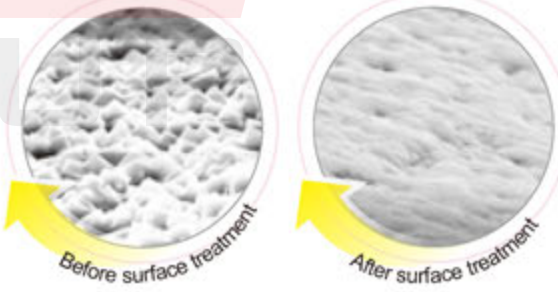
YBC352

Thickness TiCN and Al_2O_3 coating, with strongest toughness and plastic deformation resistance, the ideal grade for high efficient steel rough machining under the bad condition.

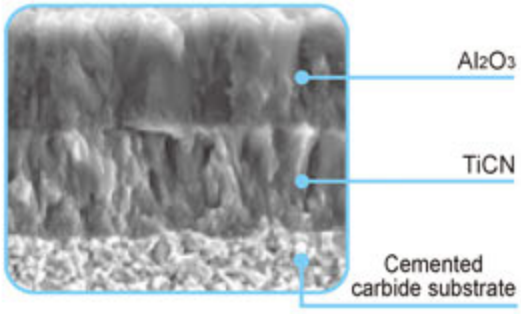
- Perfect unification of toughness and anti-plastic deformation.
  Specially designed cutting edge with "skeleton" realizes perfect unification of toughness and anti-plastic deformation.



- Roughness of insert surface is improved after special treatment on surface, which effectively reduces cutting forces, prevents workpiece adhering to surface of inserts and improves operation stability of inserts.

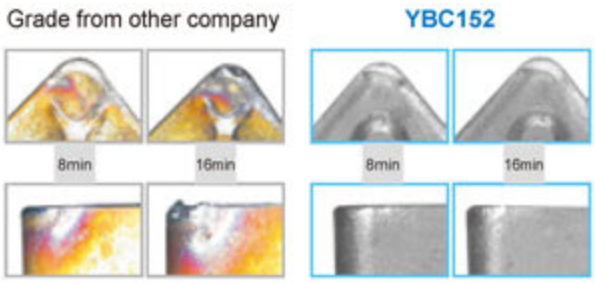


- The perfect combination of fibrous TiCN and fine grain Al_2O_3 obviously improves abrasion resistance and anti-breakage of inserts.



Test comparison of inserts abrasion

Workpiece material：45#steel
Inserts：CNMG120408-DM
Cutting parameters：Vc=400m/min a_p=1mm fn=0.2mm/r



Coated Cemented Carbide CVD

YBD052

CVD coated grade, which is characterized by super fine grain and smooth surface, is the combination of hard substrate and coating (extra thick Al_2O_3 + thick TiCN). The grade is optimized for best wear resistance when machining gray cast iron at high speed under dry condition.

YBD102

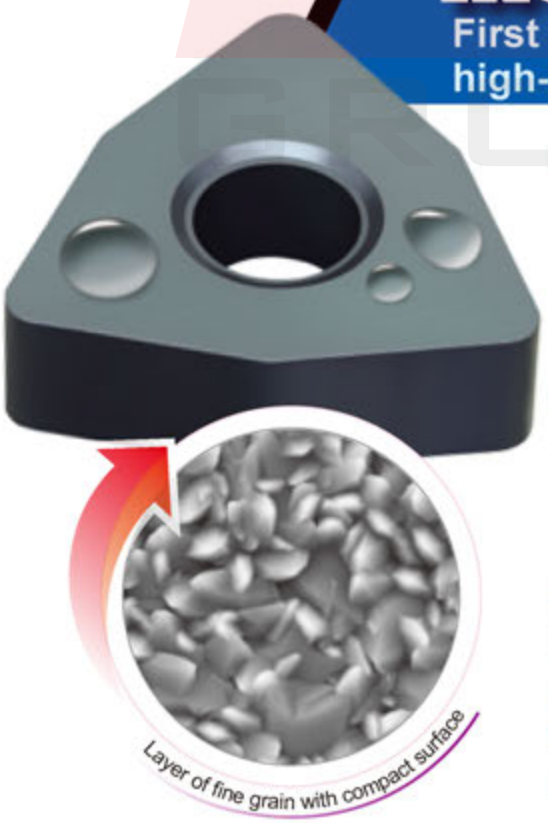
CVD coated grade, which is the combination of hard substrate and coating (thick Al_2O_3 + thick TiCN), shows excellent wear resistance and impact resistance when machining nodular cast iron at high speed.

YBD152

CVD coated grade, which is the combination of hard substrate and coating (medium thick Al_2O_3 + thick TiCN), has good flaking resistance. It is suitable for turning of cast iron at high speed, and light intermittent cutting can be supported even at moderate speed. It is also suitable for milling of cast iron.

BLACK DIAMOND INSERTS YBD

First choice for high-efficiency and high-speed machining of cast iron



- The combination of thick coating and substrate with good hardness and impact resistance gives the inserts excellent impact resistance and stability under high temperature, and improves wear resistance of inserts. Inserts also satisfy the requirements of high speed and high feed rate when machining cast iron.
- The appearance of shining full black is easily identified.

Significant results

- Working efficiency has been improved. Both the coating and the substrate are suitable for machining cast iron at high speed and high feed rate. **Cutting speed can be increased by 30% to 40%.**
- Cost is reduced as tool life **is increased by 40%-50%.**
- High machining stability.

Recommended combination of grade and chipbreaker

For machining of P-type materials

Grade	Type
YBC152	DF
YBC252	DM PM
YBC252	DR (Double-side)
YBC252	LR
YBC352	HDR HPR

For machining of M-type materials

Grade	Type
YBM153	EF EM
YBM251	EM ER
YBM253	EM ER

For machining of K-type materials

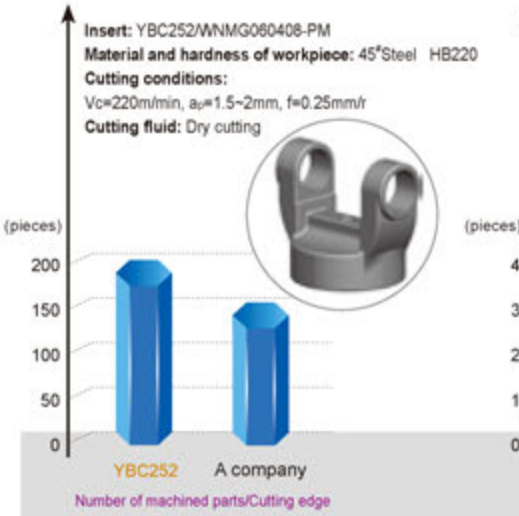
Grade	Type
YBD052	Without chipbreaker PM
YBD102	Without chipbreaker PM
YBD152	Without chipbreaker

Recommended cutting parameters

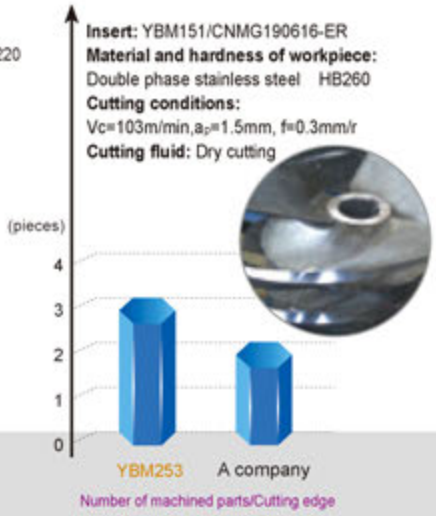
Workpiece material	Range of machining	Grade	Recommended cutting speed (m/min)
P Steel	For finishing	YBC152	220-500
	For semi-finishing	YBC252	180-480
	For roughing	YBC352	130-380
M Stainless steel	For finishing	YBM153	110-280
	For semi-finishing	YBM251	
	For roughing	YBM253	
K Cast iron	For finishing	YBD052	200-500
		YBD102	200-480
	For semi-finishing	YBD152	190-450

Case

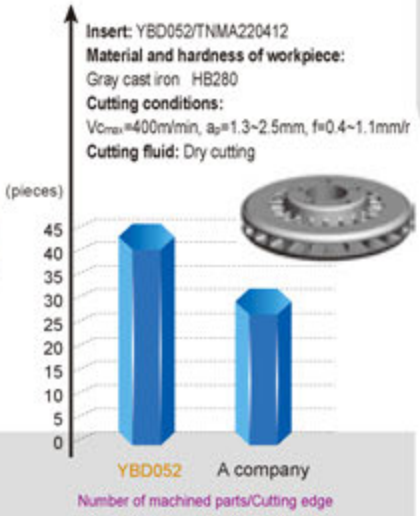
Insert: YBC252/WNMG080408-PM
Material and hardness of workpiece: 45#Steel HB220
Cutting conditions:
Vc=220m/min, a_p=1.5~2mm, f=0.25mm/r
Cutting fluid: Dry cutting



Insert: YBM151/CNMG190616-ER
Material and hardness of workpiece:
Double phase stainless steel HB260
Cutting conditions:
Vc=103m/min,a_p=1.5mm, f=0.3mm/r
Cutting fluid: Dry cutting



Insert: YBD052/TNMA220412
Material and hardness of workpiece:
Gray cast iron HB280
Cutting conditions:
Vc_{max}=400m/min, a_p=1.3~2.5mm, f=0.4~1.1mm/r
Cutting fluid: Dry cutting

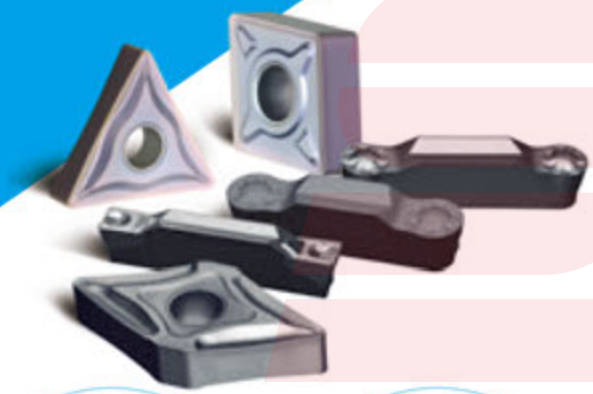


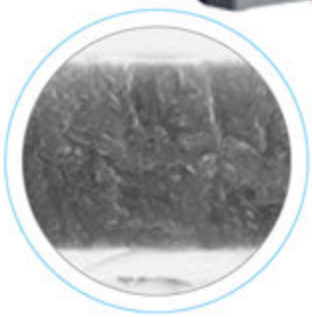
Coated Cemented Carbide PVD

makes it easy to machine materials which are hard to be machined

New nano coating grade

- Special coating techniques make inserts smooth, which leads to low friction and unobstructed chip flow.
- Unique coating with nano structure closely integrates with substrate, ensuring higher hardness and toughness.
- Excellent thermal stability and chemical stability can effectively protect cutting edge.





nc-TiAlN coating
(YBG202)

TiAlN base multi-elements coating(YBG105)

High-performance nanostructure coating guarantees good toughness and hardness of inserts. Special coating technology guarantees smooth surface and excellent wear resistance. Outstanding thermal stability and chemical stability effectively protect cutting edge.

YBG102

The combination of nc-TiAlN coating and fine grain substrate makes it suitable for turning of various materials and finishing and semi-finishing of high-temperature alloys.

YBG202

nc-TiAlN coating and ultra-fine grain substrate makes it suitable for finishing and semi-finishing of various materials and turning of super alloy.

YBG302

The combination of nc-TiAlN coating and tough cemented carbide substrate, which integrates security and wear resistance, makes it suitable for parting and grooving of various materials.

YBG105

Finishing and semi-finishing for materials difficult to cut PVD coated grade

PVD coated grade, new TiAlN based multilayer coating, has higher wear resistance and Anti-thermal-oxidation ability. It is suitable for finishing and semi-finishing turning of various materials difficult to cut, such as high temperature alloy, heat resistant alloy, etc.

YBG205

PVD coating grade for finishing of stainless steel

Suitable for relatively small workpieces which require high surface smoothness.

Superfine TiAlN nano coating added with wear-resistant and heat-resistant rare elements has high hardness and excellent heat-resistance, providing effective protection for the cutting edge. Special coating technology ensures stronger combination of coating and substrate. It is suitable for extra finishing of stainless steel.

YBG205H New

It adopts high-cobalt ultra-fine grain matrix, and through special sintering process and tungsten toughness enhancement technology, the wear resistance, impact resistance and high temperature oxidation resistance are greatly improved. The new TiAlN-based composite coating effectively improves the hardness, thermal shock resistance, and crack expansion resistance of the coating, and is suitable for fine and semi-finish turning of stainless steel.

YBG212

Nc-TiAlN coating combined with super tough substrate which made of super fine grain.It's suitable for finishing and roughing materials which are hard to be machined.

YBH053 New

Special high hard material processing grade

The high cobalt ultrafine particles are evenly distributed by special sintering process;
Excellent thermal conductivity and high temperature resistance, greatly improve the thermal crack resistance and plastic deformation resistance of the substrate, effectively prevent abnormal cutting edge failure;
Excellent red hardness and wear resistance of the substrate, greatly improve the life of the substrate, delay the size change of processing.

YBM215 New

PVD coating of multiple layer nanometer

Improved capability of grade's wear resistance and anti-high temperature increases the strength between grade and substrate and the tool stability. This grade is very suitable for turning for stainless steel.

YBS103 New

Turning grade for Ni-based S material

Fine wear resistance, and good capability against built-up edge and heat resistance. Suitable for turning of Ni-based materials.

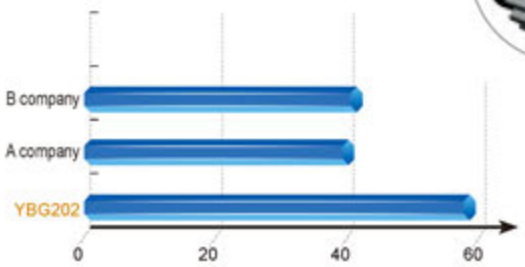
Recommended combination of grade and chipbreaker

Recommended cutting parameters

Workpiece material	Range of machining	Grade	Recommended cutting speed (m/min)
P Steel	For finishing	YBG102	180-460
	For semi-finishing	YBG202 YBG205	150-380
M Stainless steel	For finishing~for semi-finishing	YBG202 YBG205 YBM215	170-300
S Heat resistant alloy Ti alloy	For finishing~for semi-finishing	YBG102	30-60
		YBG105	40-70
		YBG212	30-50
		YBS103	40-90
	For roughing	YBG102	20-40
		YBG105	30-40
		YBG212	20-40
		YBS103	20-50

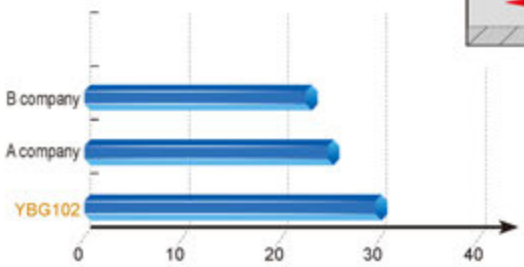
Case

Insert: YBG202/TNMG120404-EF
Hardness and material of workpiece: 0Cr18Ni9 HB240
Cutting conditions: Vc=200m/min, a_p=1mm, f=0.15mm/r
Cutting fluid: Dry cutting



Number of machined parts/Cutting edge

Insert: YBG102/DNEG150404-NF
Hardness and material of workpiece:
High temperature alloy Inconel 718 HRC≥39
Cutting conditions: Vc=80m/min, a_p=0.3mm, f=0.15mm/r
Cutting fluid: Dry cutting



Tool life (min)

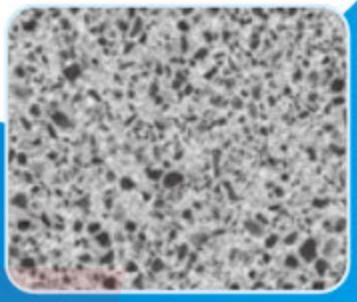
Cermet & Coated Cermet

The chemical stability between Ti(CN) base cermet inserts and workpieces is relatively high, which reduces the friction and temperature of the cutting edge during cutting, preventing mutual diffusion of atoms of the workpiece material and the inserts, and improving resistance to bonding abrasion. Therefore, Ti(CN) base cermet shows good capability of Red Hardness and resistance to crater wear. It is an optimal material for high-speed finishing and semi-finishing of steel. High temperature strength of cermet is higher than that of WC-Co, and toughness better than that of Al_2O_3 and Si_3N_4 ceramic. This fulfils the application blank of WC-base cemented carbide and Al_2O_3 and Si_3N_4 ceramic from finishing to semi-finishing at high speed.

Product features

Scientifically designed structure ensures good material performance and long tool life. Refined production management assures the stability of product quality.

- Symmetrical fine grain organization, together with the control of symmetrical organization and toric phase structure, improves the strength and hardness of cermet.
- Intensified bonding phase and well-designed grain boundary improve the high temperature capacity, heat conductibility and thermal vibration resistance.
- Coating of Physical Vapor Deposition (PVD) is applied to cermet substrate with high toughness, so that the grade has high hardness and toughness with wide-range application.



Substrate of cermet grade of YNG151 (homogenized ultra-fine structure)

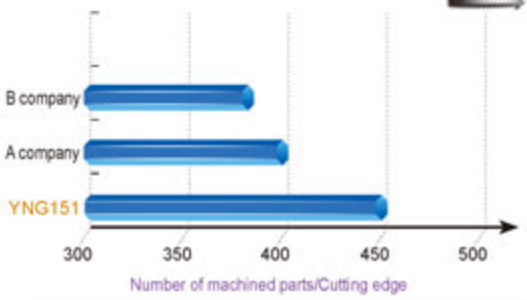
PVD coating organization structure of cermet

Recommended cutting parameters

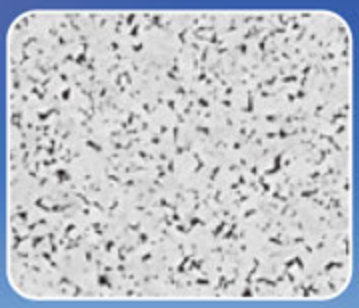
Workpiece material	Range of machining	Grade	Recommended cutting speed (m/min)
P Steel	For finishing	YNG151	260-550
		YNG151C	260-580
M Stainless steel		YNG151	170-330
		YNG151C	160-350
K Cast iron		YNG151	250-400
		YNG151C	270-420

Case

Insert: YNG151/CNMG120404-SF
Hardness and material of workpiece:
20CrMnTi HB180-223
Cutting parameters: V_C=220m/min
a_p=0.5~1.0mm
f=0.14mm/r



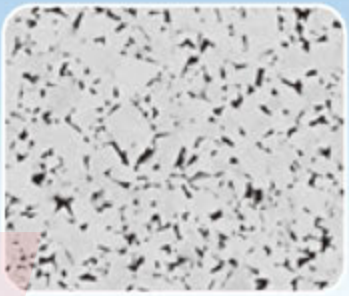
Outstanding chip breaking Good surface quality



Substrate of YD101: the combination of cemented carbide phrase WC of fine grain and bonding phase Co

Cemented Carbide Grade

Uncoated cemented carbide grade is widely used for machining of non-ferrous metal, high temperature alloy, etc. It is economical and can be universally applied.



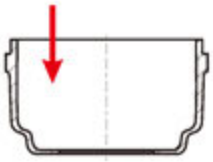
Substrate of YD201: the combination of cemented carbide phase WC of middle grain and bonding phase Co

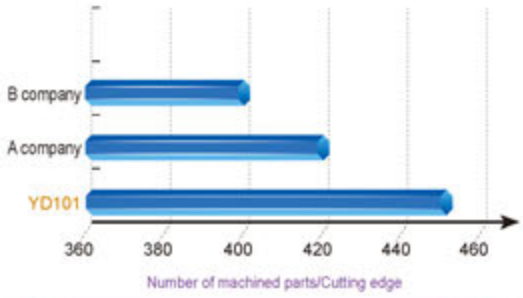
Recommended cutting parameters

Workpiece material	Range of machining	Grade	Recommended cutting speed (m/min)
K Cast iron	For semi-finishing For roughing	YD201	60-130
N Non-ferrous metal	For finishing For semi-finishing	YD101	110-1750
S Heat resistant alloy Ti alloy	For finishing	YD101	20-50

Case

Insert: YD101/CCGX09T304-LH
Workpiece material: ZL105 HB70
Cutting parameters: Vc=400m/min
a_p=1mm
f=0.3mm/r





Workpiece has high surface quality and high dimensional precision.

Table of correctional coefficient between material hardness and cutting speed

Workpiece material		Theoretical Hardness	Correctional coefficient between hardness of materials and cutting speed								
			Hardness decrease		Hardness difference(Measured value – Theoretical value)					Hardness increase	
			-60	-40	-20	0	+20	+40	+60	+80	+100
P		HB180	1.42	1.24	1.11	1.0	0.91	0.84	0.77	0.72	0.67
M		HB180	1.44	1.25	1.11	1.0	0.91	0.84	0.78	0.73	0.68
K	Grey cast iron	HB220	1.21	1.13	1.06	1.0	0.95	0.90	0.86	0.82	0.79
	Nodular cast iron	HB250	1.33	1.21	1.09	1.0	0.91	0.84	0.75	0.70	0.65
N		HB75			1.05	1.0	0.95				
S		HB350			1.12	1.0	0.89				
Rockwell hardness HRC				-6	-3	0	+3	+6	+9		
H		HRC60		1.10	1.02	1.0	0.96	0.93	0.90		

Actual Cutting Speed = Recommended Cutting Speed×Correctional Coefficient of Cutting Speed

※Please find recommended cutting parameters on insert packing box.
Example: If the material you are going to machine is normal alloy steel, whose theoretical hardness is HB180, and the selected insert is CNMG120404-DF/YBC151, then the recommended cutting speed is V=150m/min. If the hardness measured value of the material is HB220, then the hardness difference value is 220-180= +40. Correctional coefficient found in the table is 0.84. Therefore, the actual applicable cutting speed is Vc=250×0.84=210m/min.

Correctional coefficient table between tool life and cutting speed

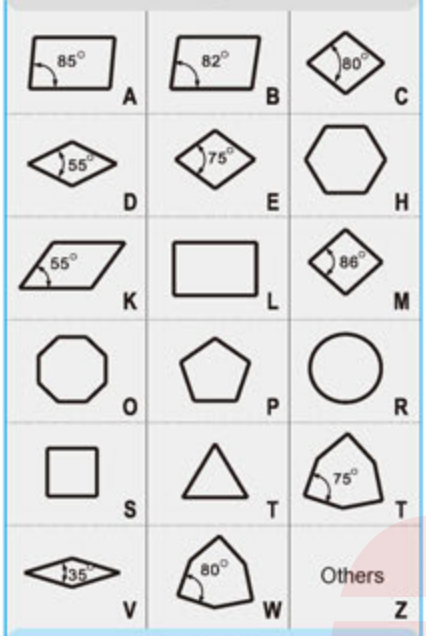
Tool life / Insert materials	Correctional coefficient between tool life and cutting speed					
	10 minutes	15 minutes (Standard life)	30 minutes	45 minutes	60 minutes	90 minutes
YBC152	1.25	1.00	0.68	0.54	0.46	0.37
YBC252	1.55	1.00	0.47	0.30	0.22	0.14
YBM153	1.32	1.00	0.64	0.48	0.37	0.31
YBM215	1.22	1.00	0.85	0.77	0.72	0.67
YBM251	1.19	1.00	0.75	0.63	0.56	0.47
YBM253	1.22	1.00	0.73	0.61	0.54	0.45
YBG202	1.10	1.00	0.85	0.77	0.72	0.66
YBG205	1.15	1.00	0.82	0.74	0.69	0.64
YBD052	1.22	1.00	0.80	0.65	0.60	0.55
YBD102	1.20	1.00	0.75	0.62	0.58	0.50
YBD152	1.11	1.00	0.70	0.60	0.50	0.40
YBG105	1.28	1.00	0.79	0.72	0.63	0.58
YBG212	1.25	1.00	0.75	0.70	0.60	0.50
YBS103	1.35	1.00	0.85	0.78	0.68	0.62

Actual cutting speed = Recommended cutting speed × Correctional coefficient of cutting speed

Example: If the material you are going to machine is normal alloy steel, and the selected insert is CNMG120404-DF/YBC151, then the recommended cutting speed is V=250m/min (standard life is 15 minutes). If you expect the tool life to reach 60 minutes, the correctional coefficient found in the table is 0.67, then the applicable cutting speed is Vc=250×0.67=167.5m/min.

General turning inserts code key

Insert shape/Code



Insert shape

Metric

Code	With/Without hole	With/Without chipbreaker	Section plane of insert	Code	With/Without hole	With/Without chipbreaker	Section plane of insert
B	With	Without	>65°	N	Without	Without	
H	With	Single-side	>65°	R	Without	Single-side	
C	With	Without	>65°	F	Without	Double-side	
J	With	Double-side	>65°	A	With	Without	
W	With	Without	≤65°	M	With	Single-side	
T	With	Single-side	≤65°	G	With	Double-side	
Q	With	Without	≤65°	X	---	---	Special
U	With	Double-side	≤65°				

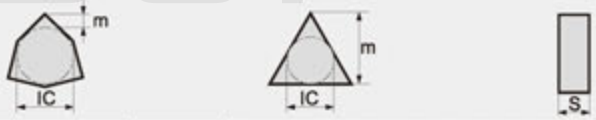
Chipbreaker and clamping system

T N M G

Clearance angle of main cutting edge

Code	Clearance angle	Code	Clearance angle
A	3°	B	5°
C	7°	D	15°
E	20°	F	25°
G	30°	N	0°
P	11°	O	Other clearance angles

Tolerance



Code	Nose height m Tolerance(mm)	Inscribed circle IC Tolerance(mm)	Thickness S Tolerance(mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05-±0.13	±0.025
K	±0.013	±0.05-±0.13	±0.025
L	±0.025	±0.05-±0.13	±0.025
M	±0.08-±0.18	±0.05-±0.13	±0.13
N	±0.08-±0.18	±0.05-±0.13	±0.025
U	±0.13-±0.38	±0.08-±0.25	±0.13

(Reference) Details of M-level tolerance (Identified by shape)

● Nose height tolerance(mm)

Inscribed circle	Regular triangle	Square	Diamond with 80°	Diamond with 55°	Diamond with 35°	Round
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	---
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	---
12.7	±0.13	±0.13	±0.13	±0.15	---	---
15.875	±0.15	±0.15	±0.15	±0.18	---	---
19.05	±0.15	±0.15	±0.15	±0.18	---	---
25.4	---	±0.18	---	---	---	---

● Tolerance of inscribed circle IC(mm)

Inscribed circle	Regular triangle	Square	Diamond with 80°	Diamond with 55°	Diamond with 35°	Round
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	---
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.7	±0.08	±0.08	±0.08	±0.08	---	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	---	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	---	±0.10
25.4	---	±0.13	---	---	---	±0.13

General turning inserts code key

Diameter of IC	Insert shape							
	C	D	R	S	T	V	W	K
3.97					06			
5.0			05					
5.56					09			
6.0			06					
6.35	06	07			11	11		
8.0			08					
9.525	09	11	09	09	16	16	06	16
10.0			10					
12.0			12					
12.7	12	15	12	12	22	22	08	
15.875	16		15	15	27			
16.0		19	16					
19.05	19		19	19	33			
20.0			20					
25.0	25	25	25					
25.4			25	25				
31.75			31					
32			32					

Length of cutting edge

Thickness is defined as the height from the bottom of insert to the highest part of cutting edge

Code	Insert thickness(mm)
00	0.79
T0	0.99
01	1.59
T1	1.98
02	2.38
T2	2.58
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.96
T5	5.95
06	6.35
T6	6.75
07	7.94
09	9.52
T9	9.72
11	11.11
12	12.70

Insert thickness

22 04 08 - DM (ISO)

4 3 2 (inch)

Inscribed circle

Code	Diameter of IC(mm)
2	6.35
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4

Thickness

Code	Thickness (mm)
2	3.18
3	4.76
4	6.35
5	7.94
6	9.52

Nose radius

Code	Nose radius (mm)
0	0.2
1	0.4
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4

Nose radius code

Code	Nose radius (mm)
00	No radius
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
32	3.2
X	Others
Diameter of insert (Metric)	Round insert

Chipbreaker code

DF	DM	DR
HF	HM	HR
EF	EM	ER
NF	NM	SF
PM	SNR	

Metric and inch comparison table for negative inserts

C-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	090304	321	-XF -XM -DF -SF -EF -NF -PM -DM -EM -NM -DR -ER -LR -HDR -HPR -SNR
	090308	322	
	120404	431	
	120408	432	
	120412	433	
	120416	434	
	160608	542	
	160612	543	
	160616	544	
	190608	642	
	190612	643	
	190616	644	
	190624	646	
	250724	856	
	250732	858	
	250924	866	
	250932	868	

D-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	110404	331	-XF -XM -EF -DF -SF -NF -PM -DM -EM -NM -DR -ER -LR -HDR -SNR -NGF
	110408	332	
	110412	333	
	150404	431	
	150408	432	
	150412	433	
	150604	441	
	150608	442	
	150612	443	
	150616	444	
	190608	542	
	190612	543	

V-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	160404	331	-XF -XM -DF -EF -SF -NF -PM -DM -EM -NM -SNR -NGF
	160408	332	
	160412	333	

R-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	120400	43	

W-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	06T304	3(2.5)1	-XF -XM -DF -SF -EF -NF -PM -DM -EM -NM -DR -SNR
	06T308	3(2.5)2	
	06T312	3(2.5)3	
	060404	331	
	060408	332	
	060412	333	
	080404	431	
	080408	432	
	080412	433	

T-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	110304	221	-XF -XM -DF -SF -EF -PM -DM -EM -DR -ER -LR -HDR -SNR
	110308	222	
	160404	331	
	160408	332	
	160412	333	
	220404	431	
	220408	432	
	220412	433	
	220416	434	
	270608	542	
	270612	543	
	270616	544	

S-type negative angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	090304	321	-XF -XM -DF -SF -EF -PM -DM -EM -NM -DR -ER -LR -HDR -HPR -SNR
	090308	322	
	090312	323	
	120404	431	
	120408	432	
	120412	433	
	120416	434	
	150608	542	
	150612	543	
	150616	544	
	190412	633	
	190424	636	
	190612	643	
	190616	644	
	250724	856	
	250732	858	
	250924	866	
	250932	868	

Metric and inch comparison table for positive insert

C-type positive angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	060202	2(1.5)0	-XF -XM -SF -HF -EF -HM -EM -HR -LH -LC
	060204	2(1.5)1	
	060208	2(1.5)2	
	09T302	3(2.5)0	
	09T304	3(2.5)1	
	09T308	3(2.5)2	
	120404	431	
	120408	432	
	120412	433	

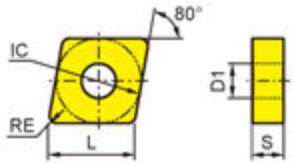
D-type positive angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	070202	2(1.5)0	-XF -XM -SF -HF -EF -HM -EM -HR -LH -LC
	070204	2(1.5)1	
	070208	2(1.5)2	
	11T302	3(2.5)0	
	11T304	3(2.5)1	
	11T308	3(2.5)2	
	11T312	3(2.5)3	

T-type positive angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	06T102	1.2(1.2)0	-XF -XM -SF -HF -EF -HM -EM -HR -LH -LC
	06T104	1.2(1.2)1	
	06T108	1.2(1.2)2	
	090202	1.8(1.5)0	
	090204	1.8(1.5)1	
	090208	1.8(1.5)2	
	110202	2(1.5)0	
	110204	2(1.5)1	
	110208	2(1.5)2	
	110302	220	
	110304	221	
	110308	222	
	16T302	3(2.5)0	
	16T304	3(2.5)1	
	16T308	3(2.5)2	
	16T312	3(2.5)3	
	160400	330	
	220408	432	
	220412	433	
	220416	434	
	270408	532	
	270412	533	
	330612	643	
	330616	644	

S-type positive angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	060204	2(1.5)1	-XF -XM -HF -EF -HM -EM -HR -LH -LC
	09T302	3(2.5)0	
	09T304	3(2.5)1	
	09T308	3(2.5) 2	
	120404	431	
	120408	432	
	120412	433	
	150404	531	
	150408	532	
	150412	533	
	190408	632	
	190412	633	
	190416	634	

V-type positive angle	(ISO)	(Inch)	Chipbreaker
Insert shape 	110202	2(1.5)0	-XF -XM -SF -HF -NF -LH -LC -NGF
	110204	2(1.5)1	
	110208	2(1.5)2	
	110302	220	
	110304	221	
	110308	222	
	160402	330	
	160404	331	
	160408	332	
	160412	333	

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XF  For finishing	CNMG120404-XF	12.9	12.7	4.76	5.16	0.4	★	★																						
	CNMG120408-XF	12.9	12.7	4.76	5.16	0.8	★	★																						
	CNMG120412-XF	12.9	12.7	4.76	5.16	1.2	★	★																						
DF  For finishing	CNMG090304-DF	9.7	9.525	3.18	3.81	0.4			○	○				○																
	CNMG090308-DF	9.7	9.525	3.18	3.81	0.8			○	○																				
	CNMG120404-DF	12.9	12.7	4.76	5.16	0.4			★	★				○							○						○			
	CNMG120408-DF	12.9	12.7	4.76	5.16	0.8			★	★				○							○						●			
	CNMG120412-DF	12.9	12.7	4.76	5.16	1.2			★	○											○									
SF  For finishing	CNMG090304-SF	9.7	9.525	3.18	3.81	0.4						○															○			
	CNMG090308-SF	9.7	9.525	3.18	3.81	0.8						○															○	★		
	CNMG120404-SF	12.9	12.7	4.76	5.16	0.4						○						★										★		
	CNMG120408-SF	12.9	12.7	4.76	5.16	0.8						○						★										★		
	CNMG120412-SF	12.9	12.7	4.76	5.16	1.2						○															○			
EF  For finishing	CNMG090304-EF	9.7	9.525	3.18	3.81	0.4								●	★				★	○										
	CNMG090308-EF	9.7	9.525	3.18	3.81	0.8								○	★				★	○										
	CNMG120404-EF	12.9	12.7	4.76	5.16	0.4								●	★				★	★										
	CNMG120408-EF	12.9	12.7	4.76	5.16	0.8						●		●	★				★	★										
	CNMG120412-EF	12.9	12.7	4.76	5.16	1.2								○	★				★	★										

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

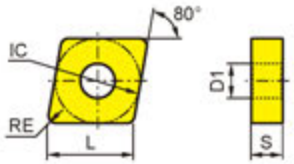
MCLNR/L KAPR:95°

A155

PCLNR/L KAPR:95°

A194

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😐	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐	😐		😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
ADF  For finishing	CNMG120404-ADF	12.9	12.7	4.76	5.16	0.4											★	★												
	CNMG120408-ADF	12.9	12.7	4.76	5.16	0.8											★	★												
	CNMG120412-ADF	12.9	12.7	4.76	5.16	1.2											★	★												
NF  For finishing	CNEG120404-NF	12.9	12.7	4.76	5.16	0.4						●	★										★						○	
	CNEG120408-NF	12.9	12.7	4.76	5.16	0.8						○	★																○	
	CNEG120412-NF	12.9	12.7	4.76	5.16	1.2						○	★																○	
PM  For semi-finishing	CNMG090304-PM	9.7	9.525	3.18	3.81	0.4			★	○																				
	CNMG090308-PM	9.7	9.525	3.18	3.81	0.8			○	○																★				
	CNMG120404-PM	12.9	12.7	4.76	5.16	0.4			★	★															★	★				
	CNMG120408-PM	12.9	12.7	4.76	5.16	0.8			★	★															★	★				
	CNMG120412-PM	12.9	12.7	4.76	5.16	1.2			○	★															★	★				
	CNMG120416-PM	12.9	12.7	4.76	5.16	1.6			★	○															★	○				
	CNMG160608-PM	16.1	15.875	6.35	6.35	0.8			○	○															○	○				
	CNMG160612-PM	16.1	15.875	6.35	6.35	1.2			○	○															★	○				
	CNMG160616-PM	16.1	15.875	6.35	6.35	1.6				○															○	○				
	CNMG190608-PM	19.3	19.05	6.35	7.94	0.8			★	○																★				
	CNMG190612-PM	19.3	19.05	6.35	7.94	1.2			★	★															○	★				
	CNMG190616-PM	19.3	19.05	6.35	7.94	1.6			★	○															○					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

MCLNR/L KAPR:95°

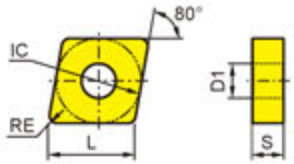
A155

PCLNR/L KAPR:95°

A194

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹️	😊		😃	😃		☹️	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹️				☹️
N	Non-ferrous metal																							😃	☹️
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet	Coated cermet	Cemented carbide	
XM  For semi-finishing	CNMG120404-XM	12.9	12.7	4.76	5.16	0.4	★	★																						
	CNMG120408-XM	12.9	12.7	4.76	5.16	0.8	★	★																						
	CNMG120412-XM	12.9	12.7	4.76	5.16	1.2	★	★																						
	CNMG120416-XM	12.9	12.7	4.76	5.16	1.6	★	★																						
	CNMG160608-XM	16.1	15.875	6.35	6.35	0.8	★	★																						
	CNMG160612-XM	16.1	15.875	6.35	6.35	1.2	★	★																						
	CNMG160616-XM	16.1	15.875	6.35	6.35	1.6	★	★																						
	CNMG190608-XM	19.3	19.05	6.35	7.97	0.8	★	★																						
	CNMG190612-XM	19.3	19.05	6.35	7.97	1.2	★	★																						
	CNMG190616-XM	19.3	19.05	6.35	7.97	1.6	★	★																						
DM  For semi-finishing	CNMG090304-DM	9.7	9.525	3.18	3.81	0.4			○	○											●									
	CNMG090308-DM	9.7	9.525	3.18	3.81	0.8				○											●									
	CNMG120404-DM	12.9	12.7	4.76	5.16	0.4			★	★				●			○				●						●			
	CNMG120408-DM	12.9	12.7	4.76	5.16	0.8			★	★				●			●				●						●			
	CNMG120412-DM	12.9	12.7	4.76	5.16	1.2			★	★				○							●									
	CNMG120416-DM	12.9	12.7	4.76	5.16	1.6				○											○									
	CNMG160608-DM	16.1	15.875	6.35	6.35	0.8			★	★											●									
	CNMG160612-DM	16.1	15.875	6.35	6.35	1.2			○	★											○									
	CNMG160616-DM	16.1	15.875	6.35	6.35	1.6			★	○											○									
	CNMG190608-DM	19.3	19.05	6.35	7.94	0.8			○	○											○									
	CNMG190612-DM	19.3	19.05	6.35	7.94	1.2			★	★											○									
	CNMG190616-DM	19.3	19.05	6.35	7.94	1.6				★											○									

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

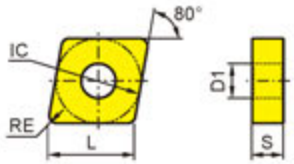
MCLNR/L KAPR:95°

A155

PCLNR/L KAPR:95°

A194

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	☹	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐			😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EM  For semi-finishing	CNMG120404-EM	12.9	12.7	4.76	5.16	0.4								●	★	★					★	★								
	CNMG120408-EM	12.9	12.7	4.76	5.16	0.8								●	★	★					★	★								
	CNMG120412-EM	12.9	12.7	4.76	5.16	1.2								●	★						★	★								
	CNMG160608-EM	16.1	15.875	6.35	6.35	0.8						○		○	★						○	★								
	CNMG160612-EM	16.1	15.875	6.35	6.35	1.2								○	★						○	★								
	CNMG160616-EM	16.1	15.875	6.35	6.35	1.6								○	★						○	★								
EG  For semi-finishing	CNMG120404-EG	12.9	12.7	4.76	5.16	0.4											★													
	CNMG120408-EG	12.9	12.7	4.76	5.16	0.8											★													
	CNMG120412-EG	12.9	12.7	4.76	5.16	1.2											★													
EH  For semi-finishing	CNMG120408-EH	12.9	12.7	4.76	5.16	0.8											★													
NM  For semi-finishing	CNMG120404-NM	12.9	12.7	4.76	5.16	0.4						○	★										★						○	
	CNMG120408-NM	12.9	12.7	4.76	5.16	0.8						●	★										★						○	
	CNMG120412-NM	12.9	12.7	4.76	5.16	1.2						○	★										○						○	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

MCLNR/L KAPR:95°

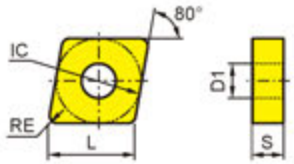
A155

PCLNR/L KAPR:95°

A194

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LR  Light-load roughing	CNMM120408-LR	12.9	12.7	4.76	5.16	0.8				★																				
	CNMM120412-LR	12.9	12.7	4.76	5.16	1.2				★																				
	CNMM120416-LR	12.9	12.7	4.76	5.16	1.6				★																				
	CNMM160608-LR	16.1	15.875	6.35	6.35	0.8				★																				
	CNMM160612-LR	16.1	15.875	6.35	6.35	1.2				★																				
	CNMM160616-LR	16.1	15.875	6.35	6.35	1.6				★																				
	CNMM160624-LR	16.1	15.875	6.35	6.35	2.4				★																				
	CNMM190612-LR	19.3	19.05	6.35	7.94	1.2				★																				
	CNMM190616-LR	19.3	19.05	6.35	7.94	1.6				★																				
	CNMM190624-LR	19.3	19.05	6.35	7.94	2.4				★																				
	CNMM250924-LR	25.79	25.4	9.525	9.12	2.4				★																				
DR  Light-load roughing	CNMG120408-DR	12.9	12.7	4.76	5.16	0.8			★	★											●				●					
	CNMG120412-DR	12.9	12.7	4.76	5.16	1.2			○	★											●				●					
	CNMG120416-DR	12.9	12.7	4.76	5.16	1.6			○	○											●				●					
	CNMG160608-DR	16.1	15.875	6.35	6.35	0.8				○											○									
	CNMG160612-DR	16.1	15.875	6.35	6.35	1.2				★											●				○					
	CNMG160616-DR	16.1	15.875	6.35	6.35	1.6				★																				
	CNMG190608-DR	19.3	15.875	6.35	7.94	0.8				○											●				○					
	CNMG190612-DR	19.3	19.05	6.35	7.94	1.2			○	★											○				○					
	CNMG190616-DR	19.3	19.05	6.35	7.94	1.6			○	★															○					
	CNMG190624-DR	19.3	19.05	6.35	7.94	2.4			○	○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

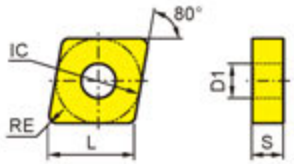
MCLNR/L KAPR:95°

A155

PCLNR/L KAPR:95°

A194

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
DR  For roughing	CNMM120412-DR	12.9	12.7	4.76	5.16	1.2				○																				
	CNMM160612-DR	16.1	15.875	6.35	6.35	1.2				○																				
	CNMM160616-DR	16.1	15.875	6.35	6.35	1.6				○																				
	CNMM190612-DR	19.3	19.05	6.35	7.94	1.2				○																				
	CNMM190616-DR	19.3	19.05	6.35	7.94	1.6				★																				
	CNMM190624-DR	19.3	19.05	6.35	7.94	2.4			○																					
	CNMM250924-DR	25.79	25.4	9.525	9.12	2.4				★																				
ER  For roughing	CNMG120408-ER	12.9	12.7	4.76	5.16	0.8																★								
	CNMG120412-ER	12.9	12.7	4.76	5.16	1.2																★								
	CNMG160612-ER	16.1	15.875	6.35	6.35	1.2																★								
	CNMG160616-ER	16.1	15.875	6.35	6.35	1.6																★								
	CNMG190612-ER	19.3	19.05	6.35	7.94	1.2																★								
	CNMG190616-ER	19.3	19.05	6.35	7.94	1.6																★								
ER  For roughing	CNMM250724-ER	25.79	25.4	7.94	9.12	2.4				★												★								
	CNMM250732-ER	25.79	25.4	7.94	9.12	3.2				★												★								
	CNMM250924-ER	25.79	25.4	9.525	9.12	2.4				★												★								
	CNMM250932-ER	25.79	25.4	9.525	9.12	3.2				★												★								
SNR  For roughing	CNMG120408-SNR	12.9	12.7	4.76	5.16	0.8						○	●			○							★							
	CNMG120412-SNR	12.9	12.7	4.76	5.16	1.2						○	●			○							★							
	CNMG160608-SNR	16.1	15.875	6.35	6.35	0.8						○	●			○							★							
	CNMG190616-SNR	19.3	19.05	6.35	7.94	1.6						○	●			○							★							

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A136

PCBNR/L KAPR:75°

A142

PCLNR/L KAPR:95°

A143

MCBNR/L KAPR:75°

A154

MCLNR/L KAPR:95°

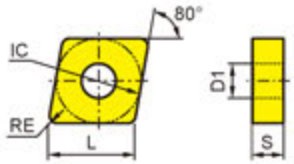
A155

PCLNR/L KAPR:95°

A194

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹️	😊		😃	😃		☹️	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹️				☹️
N	Non-ferrous metal																							😃	☹️
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
HDR  For heavy machining	CNMM120408-HDR	12.9	12.7	4.76	5.16	0.8			○	○	○																			
	CNMM120412-HDR	12.9	12.7	4.76	5.16	1.2				○	○																			
	CNMM120416-HDR	12.9	12.7	4.76	5.16	1.6					○																			
	CNMM160612-HDR	16.1	15.875	6.35	6.35	1.2					○																			
	CNMM160616-HDR	16.1	15.875	6.35	6.35	1.6				○	○																			
	CNMM190616-HDR	19.3	19.05	6.35	7.94	1.6				○	○																			
	CNMM190624-HDR	19.3	19.05	6.35	7.94	2.4			○	○	○																			
HPR  For heavy machining	CNMM190616-HPR	19.5	19.05	6.35	7.94	1.6				★	○																			
	CNMM250924-HPR	25.19	25.4	9.525	9.12	2.4				★	○																			
TC 	CNMG120404-TC	12.9	12.7	4.76	5.16	0.4																				★				
	CNMG120408-TC	12.9	12.7	4.76	5.16	0.8																				★				
	CNMG120412-TC	12.9	12.7	4.76	5.16	1.2																				★				
	CNMG120416-TC	12.9	12.7	4.76	5.16	1.6																				★				
	CNMG160608-TC	16.1	15.875	6.35	6.35	0.8																				★				
	CNMG160612-TC	16.1	15.875	6.35	6.35	1.2																				★				
	CNMG160616-TC	16.1	15.875	6.35	6.35	1.6																				★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A158

PCBNR/L KAPR:75°

A164

PCLNR/L KAPR:95°

A165

MCBNR/L KAPR:75°

A176

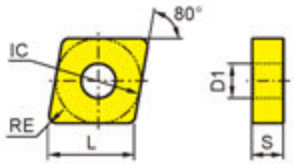
MCLNR/L KAPR:95°

A177

PCLNR/L KAPR:95°

A216

CN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K Cast iron																		😊	😃	☹				☹
N Non-ferrous metal																							😃	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
Without chipbreaker 	CNMA120404	12.9	12.7	4.76	5.16	0.4																		★	○	○				
	CNMA120408	12.9	12.7	4.76	5.16	0.8																		★	★	★				
	CNMA120412	12.9	12.7	4.76	5.16	1.2																		★	★	★				
	CNMA120416	12.9	12.7	4.76	5.16	1.6																		★	★	○				
	CNMA160608	16.1	15.875	6.35	6.35	0.8																			○					
	CNMA160612	16.1	15.875	6.35	6.35	1.2																			★					
	CNMA160616	16.1	15.875	6.35	6.35	1.6																		○	★	○				
	CNMA160620	16.1	15.875	6.35	6.35	2.0																				○				
	CNMA160630	16.1	15.875	6.35	6.35	3.0																				○				
	CNMA190612	19.3	19.05	6.35	7.94	1.2																		★	○	★				
	CNMA190616	19.3	19.05	6.35	7.94	1.6																		○	★	★				
All round 	CNMG120404	12.9	12.7	4.76	5.16	0.4															●				○					
	CNMG120408	12.9	12.7	4.76	5.16	0.8			★	★											●				★	★				
	CNMG120412	12.9	12.7	4.76	5.16	1.2			★	★														○	○	○				
	CNMG160608	16.1	15.875	6.35	6.35	0.8															○									
	CNMG160612	16.1	15.875	6.35	6.35	1.2																			○					
	CNMG160616	16.1	15.875	6.35	6.35	1.6																			○					
	CNMG190608	19.3	19.05	6.35	7.94	0.8																			○					
	CNMG190612	19.3	19.05	6.35	7.94	1.2																			○					
	CNMG190616	19.3	19.05	6.35	7.94	1.6																			○					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DCLNR/L KAPR:95°

Page A158

PCBNR/L KAPR:75°

A164

PCLNR/L KAPR:95°

A165

MCBNR/L KAPR:75°

A176

MCLNR/L KAPR:95°

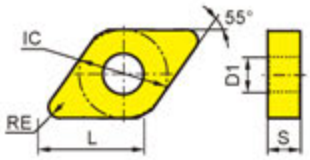
A177

PCLNR/L KAPR:95°

A216

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XF  For finishing	DNMG110404-XF	11.6	9.525	4.76	3.18	0.4	★	★																						
	DNMG110408-XF	11.6	9.525	4.76	3.18	0.8	★	★																						
	DNMG150604-XF	15.5	12.7	6.35	5.16	0.4	★	★																						
	DNMG150608-XF	15.5	12.7	6.35	5.16	0.8	★	★																						
	DNMG150612-XF	15.5	12.7	6.35	5.16	1.2	★	★																						
DF  For finishing	DNMG110404-DF	11.6	9.525	4.76	3.81	0.4			○	○																	●			
	DNMG110408-DF	11.6	9.525	4.76	3.81	0.8			○	○																				
	DNMG110412-DF	11.6	9.525	4.76	3.81	1.2			○																					
	DNMG150404-DF	15.5	12.7	4.76	5.16	0.4			★	★																				
	DNMG150408-DF	15.5	12.7	4.76	5.16	0.8			★	★																				
	DNMG150412-DF	15.5	12.7	4.76	5.16	1.2			○	○																				
	DNMG150604-DF	15.5	12.7	6.35	5.16	0.4			★	★											○									
	DNMG150608-DF	15.5	12.7	6.35	5.16	0.8			★	○																				
	DNMG150612-DF	15.5	12.7	6.35	5.16	1.2			○	○																				
SF  For finishing	DNMG110404-SF	11.6	9.525	4.76	3.81	0.4						○															○	★		
	DNMG150404-SF	15.5	12.7	4.76	5.16	0.4						○															○	★		
	DNMG150408-SF	15.5	12.7	4.76	5.16	0.8						○															○	★		
	DNMG150604-SF	15.5	12.7	6.35	5.16	0.4						○															○	★		
	DNMG150608-SF	15.5	12.7	6.35	5.16	0.8						○						★									○	★		

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

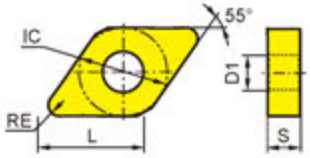
PDPNR/L KAPR:62°30'

A195

PDUNR/L KAPR:93°

A196

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal	Normal	Normal	Good									Good	Good		
M	Stainless steel						Good		Normal	Normal	Normal	Normal		Good	Good	Normal	Normal					Good	Good		
K	Cast iron																		Good	Normal	Bad				Bad
N	Non-ferrous metal																							Normal	Bad
S	Heat resistant alloy, Ti alloy						Good	Good										Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EF  For finishing	DNMG110404-EF	11.6	9.525	4.76	3.81	0.4								●	★				★	★										
	DNMG110408-EF	11.6	9.525	4.76	3.81	0.8								○	★				★	○										
	DNMG110412-EF	11.6	9.525	4.76	3.81	1.2								○	★				★	○										
	DNMG150404-EF	15.5	12.7	4.76	5.16	0.4								●	★				★	○										
	DNMG150408-EF	15.5	12.7	4.76	5.16	0.8								●	★				★	○										
	DNMG150412-EF	15.5	12.7	4.76	5.16	1.2								○	★				★	○										
	DNMG150604-EF	15.5	12.7	6.35	5.16	0.4								●	★				★	★										
	DNMG150608-EF	15.5	12.7	6.35	5.16	0.8								●	★				★	★										
	DNMG150612-EF	15.5	12.7	6.35	5.16	1.2								○	★				★	★										
ADF  For finishing	DNMG110408-ADF	11.6	9.525	4.76	3.81	0.8										★	★													
	DNMG150404-ADF	15.5	12.7	4.76	5.16	0.4										★	★													
	DNMG150408-ADF	15.5	12.7	4.76	5.16	0.8										★	★													
	DNMG150412-ADF	15.5	12.7	4.76	5.16	1.2										★	★													
	DNMG150604-ADF	15.5	12.7	6.35	5.16	0.4										★	★													
	DNMG150608-ADF	15.5	12.7	6.35	5.16	0.8										★	★													
	DNMG150612-ADF	15.5	12.7	6.35	5.16	1.2										★	★													
NF  For finishing	DNEG150404-NF	15.5	12.7	4.76	5.16	0.4						○	★																○	
	DNEG150408-NF	15.5	12.7	4.76	5.16	0.8						○	★																○	
	DNEG150604-NF	15.5	12.7	6.35	5.16	0.4						●	★										★						○	
	DNEG150608-NF	15.5	12.7	6.35	5.16	0.8						●	★																○	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


DDJNR/L KAPR:93°
Page A137


PDJNR/L KAPR:93°
A144


PDPNN KAPR:62°30'
A145


MDJNR/L KAPR:93°
A156

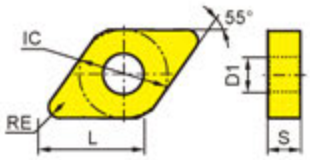

MDPNN KAPR:62°30'
A157


PDPNR/L KAPR:62°30'
A195


PDUNR/L KAPR:93°
A196

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide
NGF  For finishing	DNEG150408-NGF	15.5	12.7	4.76	5.16	0.8						○	●			○														
	DNEG150412-NGF	15.5	12.7	4.76	5.16	1.2						○	●			○														
	DNEG150608-NGF	15.5	12.7	6.35	5.16	0.8						○	●			○														
	DNEG150612-NGF	15.5	12.7	6.35	5.16	1.2						○	●			○														
PM  For semi-finishing	DNMG110404-PM	11.6	9.525	4.76	3.81	0.4			●	○																●				
	DNMG110408-PM	11.6	9.525	4.76	3.81	0.8			●	○															★	○				
	DNMG110412-PM	11.6	9.525	4.76	3.81	1.2				○																				
	DNMG150404-PM	15.5	12.7	4.76	5.16	0.4			●	○																				
	DNMG150408-PM	15.5	12.7	4.76	5.16	0.8			●	○															★	★				
	DNMG150412-PM	15.5	12.7	4.76	5.16	1.2				○		○													○	★				
	DNMG150416-PM	15.5	12.7	4.76	5.16	1.6				○																				
	DNMG150604-PM	15.5	12.7	6.35	5.16	0.4			●	○															★	★				
	DNMG150608-PM	15.5	12.7	6.35	5.16	0.8			○	★															★	★				
	DNMG150612-PM	15.5	12.7	6.35	5.16	1.2			★	★															★	○				
	DNMG150616-PM	15.5	12.7	6.35	5.16	1.6				○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


DDJNR/L
KAPR:93°
Page A137


PDJNR/L
KAPR:93°
A144


PDPNN
KAPR:62°30'
A145

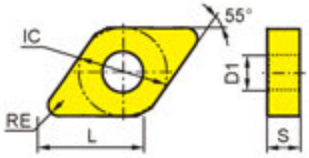

MDJNR/L
KAPR:93°
A156


MDPNN
KAPR:62°30'
A157


PDPNR/L
KAPR:62°30'
A195


PDUNR/L
KAPR:93°
A196

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XM  For semi-finishing	DNMG110404-XM	11.6	9.525	4.76	3.18	0.4	★	★																						
	DNMG110408-XM	11.6	9.525	4.76	3.18	0.8	★	★																						
	DNMG110412-XM	11.6	9.525	4.76	3.18	1.2	★	★																						
	DNMG150404-XM	15.5	12.7	4.76	5.16	0.4	★	★																						
	DNMG150408-XM	15.5	12.7	4.76	5.16	0.8	★	★																						
	DNMG150412-XM	15.5	12.7	4.76	5.16	1.2	★	★																						
	DNMG150604-XM	15.5	12.7	6.35	5.16	0.4	★	★																						
	DNMG150608-XM	15.5	12.7	6.35	5.16	0.8	★	★																						
	DNMG150612-XM	15.5	12.7	6.35	5.16	1.2	★	★																						
	DNMG150616-XM	15.5	12.7	6.35	5.16	1.6	★	★																						
DM  For semi-finishing	DNMG110404-DM	11.6	9.525	4.76	3.81	0.4			●	○											○									
	DNMG110408-DM	11.6	9.525	4.76	3.81	0.8			★	★											●									
	DNMG110412-DM	11.6	9.525	4.76	3.81	1.2			○	○																				
	DNMG150404-DM	15.5	12.7	4.76	5.16	0.4			○	★																	○			
	DNMG150408-DM	15.5	12.7	4.76	5.16	0.8			★	★																	●			
	DNMG150412-DM	15.5	12.7	4.76	5.16	1.2			★	★																				
	DNMG150416-DM	15.5	12.7	4.76	5.16	1.6				○																				
	DNMG150604-DM	15.5	12.7	6.35	5.16	0.4			★	★											●						●			
	DNMG150608-DM	15.5	12.7	6.35	5.16	0.8			★	★											●									
	DNMG150612-DM	15.5	12.7	6.35	5.16	1.2			●	★																				
	DNMG150616-DM	15.5	12.7	6.35	5.16	1.6			○	○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

PDPNR/L KAPR:62°30'

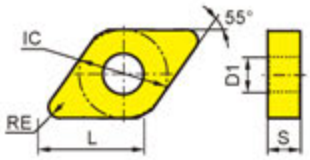
A195

PDUNR/L KAPR:93°

A196

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	Good, Normal, Good, Normal, Bad, Good, Normal, Normal, Normal, Normal, Bad, Good, Good, Good
M	Stainless steel	Good, Normal, Normal, Normal, Normal, Good, Good, Normal, Good, Good
K	Cast iron	Good, Normal, Bad, Bad
N	Non-ferrous metal	Normal, Bad
S	Heat resistant alloy, Ti alloy	Good, Good, Good, Good

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																			Cermet	Coated cermet	Cemented carbide	
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
EM  For semi-finishing	DNMG110404-EM	11.6	9.525	4.76	3.81	0.4								○	★						○	★								
	DNMG110408-EM	11.6	9.525	4.76	3.81	0.8								○	★						○	★								
	DNMG110412-EM	11.6	9.525	4.76	3.81	1.2								○	★						○	★								
	DNMG150404-EM	15.5	12.7	4.76	5.16	0.4								●	★	★					★	★								
	DNMG150408-EM	15.5	12.7	4.76	5.16	0.8								●	★	★					★	★								
	DNMG150412-EM	15.5	12.7	4.76	5.16	1.2								○	★						★	★								
	DNMG150604-EM	15.5	12.7	6.35	5.16	0.4						○		●	★						○	★								
	DNMG150608-EM	15.5	12.7	6.35	5.16	0.8								●	★						○	★								
	DNMG150612-EM	15.5	12.7	6.35	5.16	1.2								○	★						○	★								
EG  For semi-finishing	DNMG150404-EG	15.5	12.7	4.76	5.16	0.4											★													
	DNMG150408-EG	15.5	12.7	4.76	5.16	0.8											★													
	DNMG150604-EG	15.5	12.7	6.35	5.16	0.4											★													
	DNMG150608-EG	15.5	12.7	6.35	5.16	0.8											★													
	DNMG150612-EG	15.5	12.7	6.35	5.16	1.2											★													
NM  For semi-finishing	DNMG150412-NM	15.5	12.7	4.76	5.16	1.2						○	★										○						○	
	DNMG150612-NM	15.5	12.7	6.35	5.16	1.2						●	★										○						○	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

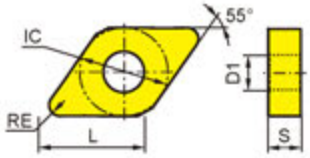
PDPNR/L KAPR:62°30'

A195

PDUNR/L KAPR:93°

A196

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet (Coated cermet)		Cemented carbide	
LR  Light-load roughing	DNMM150608-LR	15.5	12.7	6.35	5.16	0.8				★																				
	DNMM150612-LR	15.5	12.7	6.35	5.16	1.2				★																				
	DNMM150616-LR	15.5	12.7	6.35	5.16	1.6				★																				
DR  Light-load roughing	DNMG150408-DR	15.5	12.7	4.76	5.16	0.8				○																				
	DNMG150412-DR	15.5	12.7	4.76	5.16	1.2				○																				
	DNMG150416-DR	15.5	12.7	4.76	5.16	1.6				○																				
	DNMG150608-DR	15.5	12.7	6.35	5.16	0.8			★	○															●	●				
	DNMG150612-DR	15.5	12.7	6.35	5.16	1.2			○	★															○	●				
	DNMG150616-DR	15.5	12.7	6.35	5.16	1.6																				○				
DR  For roughing	DNMM150608-DR	15.5	12.7	6.35	5.16	0.8			○																					
	DNMM150612-DR	15.5	12.7	6.35	5.16	1.2			○																					
	DNMM150616-DR	15.5	12.7	6.35	5.16	1.6			○																					
ER  For roughing	DNMG150608-ER	15.5	12.7	6.35	5.16	0.8																★								
	DNMG150612-ER	15.5	12.7	6.35	5.16	1.2																★								

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

PDPNR/L KAPR:62°30'

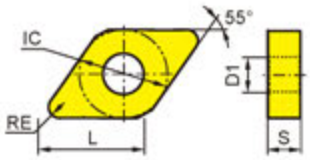
A195

PDUNR/L KAPR:93°

A196

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
ER  For roughing	DNMM150608-ER	15.5	12.7	6.35	5.16	0.8																★								
	DNMM150612-ER	15.5	12.7	6.35	5.16	1.2																★								
SNR  For roughing	DNMG150608-SNR	15.5	12.7	6.35	5.16	0.8						○	●			○							★							
	DNMG150612-SNR	15.5	12.7	6.35	5.16	1.2						○	●			○							★							
HDR  For heavy machining	DNMM150608-HDR	15.5	12.7	6.35	5.16	0.8					○																			
	DNMM150612-HDR	15.5	12.7	6.35	5.16	1.2					○																			
	DNMM150616-HDR	15.5	12.7	6.35	5.16	1.6					○																			
TC 	DNMG150404-TC	15.5	12.7	4.76	5.16	0.4																				★				
	DNMG150408-TC	15.5	12.7	4.76	5.16	0.8																				★				
	DNMG150412-TC	15.5	12.7	4.76	5.16	1.2																				★				
	DNMG150608-TC	15.5	12.7	6.35	5.16	0.8																				★				
	DNMG150612-TC	15.5	12.7	6.35	5.16	1.2																				★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

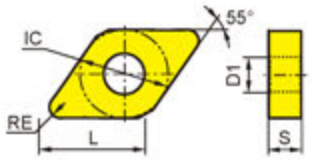
PDPNR/L KAPR:62°30'

A195

PDUNR/L KAPR:93°

A196

DN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide
Without chipbreaker 	DNMA110416	11.6	9.525	4.76	3.81	1.6																				○				
	DNMA110424	11.6	9.525	4.76	3.81	2.4																				○				
	DNMA150404	15.5	12.7	4.76	5.16	0.4																				○				
	DNMA150408	15.5	12.7	4.76	5.16	0.8																		★	★	○				
	DNMA150604	15.5	12.7	6.35	5.16	0.4																		○	○	○				
	DNMA150608	15.5	12.7	6.35	5.16	0.8																		○	★	★				
	DNMA150612	15.5	12.7	6.35	5.16	1.2																		○	○	○				
	DNMA150616	15.5	12.7	6.35	5.16	1.6																			○	○				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DDJNR/L KAPR:93°

Page A137

PDJNR/L KAPR:93°

A144

PDPNN KAPR:62°30'

A145

MDJNR/L KAPR:93°

A156

MDPNN KAPR:62°30'

A157

PDPNR/L KAPR:62°30'

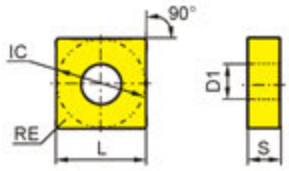
A195

PDUNR/L KAPR:93°

A196

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	
M	Stainless steel	
K	Cast iron	
N	Non-ferrous metal	
S	Heat resistant alloy, Ti alloy	

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
XF  For finishing	SNMG120404-XF	12.7	12.7	4.76	5.16	0.4	★	★																						
	SNMG120408-XF	12.7	12.7	4.76	5.16	0.8	★	★																						
	SNMG120412-XF	12.7	12.7	4.76	5.16	1.2	★	★																						
DF  For finishing	SNMG090304-DF	9.525	9.525	3.18	3.81	0.4			○																					
	SNMG090308-DF	9.525	9.525	3.18	3.81	0.8			○																					
	SNMG120404-DF	12.7	12.7	4.76	5.16	0.4			○																					
	SNMG120408-DF	12.7	12.7	4.76	5.16	0.8			○	○																	○			
	SNMG120412-DF	12.7	12.7	4.76	5.16	1.2			○	○																				
EF  For finishing	SNMG090304-EF	9.525	9.525	3.18	3.81	0.4								○	★				★	○										
	SNMG090308-EF	9.525	9.525	3.18	3.81	0.8								○	★				★	○										
	SNMG090312-EF	9.525	9.525	3.18	3.81	1.2								○	★				★	○										
	SNMG120404-EF	12.7	12.7	4.76	5.16	0.4								●	★				★	★										
	SNMG120408-EF	12.7	12.7	4.76	5.16	0.8								●	★				★	★										
	SNMG120412-EF	12.7	12.7	4.76	5.16	1.2								○	★				★	★										
	SNMG150608-EF	15.875	15.875	6.35	6.35	0.8								○	★				★	○										
	SNMG150612-EF	15.875	15.875	6.35	6.35	1.2								○	★				★	○										

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

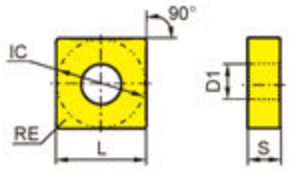
MSDNN KAPR:45°

A161

PSKNR/L KAPR:75°

A197

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😊										😊	😊	
M	Stainless steel						😊		😐	😐	😐	😐		😊	😊	😐	😐						😊	😊	
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
ADF  For finishing	SNMG120404-ADF	12.7	12.7	4.76	5.16	0.4										★	★													
	SNMG120408-ADF	12.7	12.7	4.76	5.16	0.8										★	★													
	SNMG120412-ADF	12.7	12.7	4.76	5.16	1.2										★	★													
SF  For finishing	SNMG090304-SF	9.525	9.525	3.18	3.81	0.4						○															○	★		
	SNMG090308-SF	9.525	9.525	3.18	3.81	0.8						○															○	★		
	SNMG120404-SF	12.7	12.7	4.76	5.16	0.4						○						★									○	★		
	SNMG120408-SF	12.7	12.7	4.76	5.16	0.8						○						★									○	★		
	SNMG120412-SF	12.7	12.7	4.76	5.16	1.2						○															○			
	SNMG150608-SF	15.875	15.875	6.35	6.35	0.8						○															○			

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

MSDNN KAPR:45°

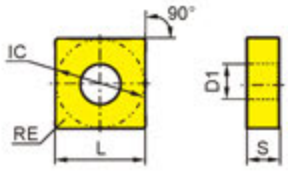
A161

PSKNR/L KAPR:75°

A197

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Cemented carbide	
PM  For semi-finishing	SNMG090304-PM	9.525	9.525	3.18	3.81	0.4			○	○																				
	SNMG090308-PM	9.525	9.525	3.18	3.81	0.8			○	○															○					
	SNMG090312-PM	9.525	9.525	3.18	3.81	1.2			○	○																				
	SNMG120404-PM	12.7	12.7	4.76	5.16	0.4			○	○															○					
	SNMG120408-PM	12.7	12.7	4.76	5.16	0.8			●	○															★	★				
	SNMG120412-PM	12.7	12.7	4.76	5.16	1.2			●	○															★	★				
	SNMG120416-PM	12.7	12.7	4.76	5.16	1.6				○																○				
	SNMG150608-PM	15.875	15.875	6.35	6.35	0.8				○																				
	SNMG150612-PM	15.875	15.875	6.35	6.35	1.2			●	○															○	●				
	SNMG190616-PM	19.05	19.05	6.35	7.94	1.6				○																				
XM  For semi-finishing	SNMG120404-XM	12.7	12.7	4.76	5.16	0.4	★	★																						
	SNMG120408-XM	12.7	12.7	4.76	5.16	0.8	★	★																						
	SNMG120412-XM	12.7	12.7	4.76	5.16	1.2	★	★																						
	SNMG120416-XM	12.7	12.7	4.76	5.16	1.6	★	★																						
	SNMG150608-XM	15.875	15.875	6.35	6.35	0.8	★	★																						
	SNMG150612-XM	15.875	15.875	6.35	6.35	1.2	★	★																						
	SNMG150616-XM	15.875	15.875	6.35	6.35	1.6	★	★																						
	SNMG190608-XM	19.05	19.05	6.35	7.94	0.8	★	★																						
	SNMG190612-XM	19.05	19.05	6.35	7.94	1.2	★	★																						
	SNMG190616-XM	19.05	19.05	6.35	7.94	1.6	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

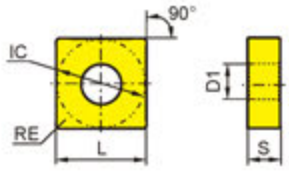
MSDNN KAPR:45°

A161

PSKNR/L KAPR:75°

A197

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐		☹	😊								😊	😊		
M Stainless steel						😊		😐	😐	😐				😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊					😊					😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	Cermet YNG151	Coated cermet YNG151C	Cemented carbide YD101	YD201
DM  For semi-finishing	SNMG090304-DM	9.525	9.525	3.18	3.81	0.4			○	○																				
	SNMG090308-DM	9.525	9.525	3.18	3.81	0.8			○	○																				
	SNMG120404-DM	12.7	12.7	4.76	5.16	0.4			★	○																				
	SNMG120408-DM	12.7	12.7	4.76	5.16	0.8				○											○						○			
	SNMG120412-DM	12.7	12.7	4.76	5.16	1.2			★	★																				
	SNMG120416-DM	12.7	12.7	4.76	5.16	1.6				○																				
	SNMG150608-DM	15.875	15.875	6.35	6.35	0.8			○	○											●									
	SNMG150612-DM	15.875	15.875	6.35	6.35	1.2			●	★																				
	SNMG150616-DM	15.875	15.875	6.35	6.35	1.6				○																				
	SNMG190612-DM	19.05	19.05	6.35	7.94	1.2			○	○											○									
	SNMG190616-DM	19.0 5	19.05	6.35	7.94	1.6				○																				
EM  For semi-finishing	SNMG120404-EM	12.7	12.7	4.76	5.16	0.4								●	★					★		★								
	SNMG120408-EM	12.7	12.7	4.76	5.16	0.8								●	★					★		★								
	SNMG120412-EM	12.7	12.7	4.76	5.16	1.2								●	★					★		★								
	SNMG120416-EM	12.7	12.7	4.76	5.16	1.6								○	★					○		★								
	SNMG150612-EM	15.875	15.875	6.35	6.35	1.2								●	★					○		★								
	SNMG150616-EM	15.875	15.875	6.35	6.35	1.6								○	★	★				○		★								

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

MSDNN KAPR:45°

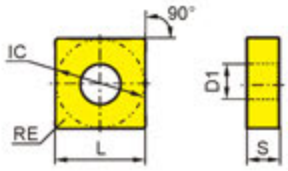
A161

PSKNR/L KAPR:75°

A197

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐			😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EG  For semi-finishing	SNMG120404-EG	12.7	12.7	4.76	5.16	0.4										★														
	SNMG120408-EG	12.7	12.7	4.76	5.16	0.8										★														
	SNMG120412-EG	12.7	12.7	4.76	5.16	1.2										★														
NM  For semi-finishing	SNMG120408-NM	12.7	12.7	4.76	5.16	0.8						●	★										○						○	
	SNMG120412-NM	12.7	12.7	4.76	5.16	1.2						○	★										○						○	
LR  Light-load roughing	SNMM120408-LR	12.9	12.7	4.76	5.16	0.8				★																				
	SNMM120412-LR	12.9	12.7	4.76	5.16	1.2				★																				
	SNMM120416-LR	12.9	12.7	4.76	5.16	1.6				★																				
	SNMM150612-LR	15.875	15.875	6.35	6.35	1.2				★																				
	SNMM150616-LR	15.875	15.875	6.35	6.35	1.6				★																				
	SNMM190612-LR	19.3	19.05	6.35	7.94	1.2				★																				
	SNMM190616-LR	19.3	19.05	6.35	7.94	1.6				★																				
	SNMM190624-LR	19.3	19.05	6.35	7.94	2.4				★																				
	SNMM250924-LR	25.79	25.4	9.525	9.12	2.4				★																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

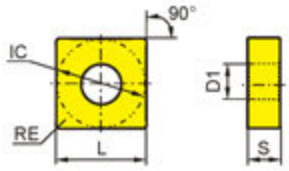
MSDNN KAPR:45°

A161

PSKNR/L KAPR:75°

A197

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet (Coated cermet)		Cemented carbide	
DR  Light-load roughing	SNMG120408-DR	12.7	12.7	4.76	5.16	0.8			○	★															○	○				
	SNMG120412-DR	12.7	12.7	4.76	5.16	1.2				○															○					
	SNMG120416-DR	12.7	12.7	4.76	5.16	1.6			○	○																				
	SNMG150608-DR	15.875	15.875	6.35	6.35	0.8				○																				
	SNMG150612-DR	15.875	15.875	6.35	6.35	1.2				★															○	○				
	SNMG150616-DR	15.875	15.875	6.35	6.35	1.6				★															○	○				
	SNMG150624-DR	15.875	15.875	6.35	6.35	2.4				○																				
	SNMG190612-DR	19.05	19.05	6.35	7.94	1.2				○																				
	SNMG190616-DR	19.05	19.05	6.35	7.94	1.6				★															○	○				
	SNMG190624-DR	19.05	19.05	6.35	7.94	2.4				○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

MSDNN KAPR:45°

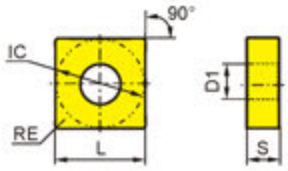
A161

PSKNR/L KAPR:75°

A197

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	Good, Normal, Good, Normal, Bad, Good, Normal, Normal, Bad, Good, Good, Good, Good
M	Stainless steel	Good, Normal, Normal, Good, Good, Good, Normal, Normal, Good, Good
K	Cast iron	Good, Normal, Bad, Bad
N	Non-ferrous metal	Normal, Bad
S	Heat resistant alloy, Ti alloy	Good, Good, Good, Good, Good

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																				Cermet			
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
DR  For roughing	SNMM120408-DR	12.7	12.7	4.76	5.16	0.8			○																					
	SNMM120412-DR	12.7	12.7	4.76	5.16	1.2			○	○																				
	SNMM120416-DR	12.7	12.7	4.76	5.16	1.6			○	○																				
	SNMM150608-DR	15.875	15.875	6.35	6.35	0.8				○																				
	SNMM150612-DR	15.875	15.875	6.35	6.35	1.2				○																				
	SNMM150616-DR	15.875	15.875	6.35	6.35	1.6				○																				
	SNMM190608-DR	19.05	19.05	6.35	7.94	0.8				○																				
	SNMM190612-DR	19.05	19.05	6.35	7.94	1.2				○																				
	SNMM190616-DR	19.05	19.05	6.35	7.94	1.6			○	★																				
	SNMM190624-DR	19.05	19.05	6.35	7.94	2.4			★	○																				
	SNMM250724-DR	25.4	25.4	7.94	9.12	2.4				○																				
	SNMM250924-DR	25.4	25.4	9.525	9.12	2.4				★																				
ER  For roughing	SNMG120408-ER	12.7	12.7	4.76	5.16	0.8																★								
	SNMG120412-ER	12.7	12.7	4.76	5.16	1.2																★								
	SNMG150608-ER	15.875	15.875	6.35	6.35	0.8																★								
	SNMG150612-ER	15.875	15.875	6.35	6.35	1.2																★								
	SNMG190612-ER	19.05	19.05	6.35	7.94	1.2																★								
	SNMG190616-ER	19.05	19.05	6.35	7.94	1.6																★								

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

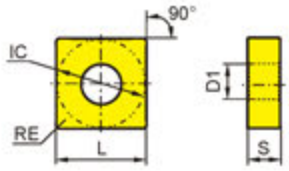
MSDNN KAPR:45°

A161

PSKNR/L KAPR:75°

A197

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
ER  For roughing	SNMM250724-ER	25.4	25.4	7.94	9.12	2.4				●												★								
	SNMM250732-ER	25.4	25.4	7.94	9.12	3.2				●												★								
	SNMM250924-ER	25.4	25.4	9.525	9.12	2.4				●												★								
	SNMM250932-ER	25.4	25.4	9.525	9.12	3.2				●												★								
SNR  For roughing	SNMG120408-SNR	12.7	12.7	4.76	5.16	0.8						○	●			○							★							
HDR  For heavy machining	SNMM120408-HDR	12.7	12.7	4.76	5.16	0.8					○																			
	SNMM120412-HDR	12.7	12.7	4.76	5.16	1.2					○																			
	SNMM120416-HDR	12.7	12.7	4.76	5.16	1.6					○																			
	SNMM150608-HDR	15.875	15.875	6.35	6.35	0.8					○																			
	SNMM150612-HDR	15.875	15.875	6.35	6.35	1.2					○																			
	SNMM150616-HDR	15.875	15.875	6.35	6.35	1.6					○																			
	SNMM150624-HDR	15.875	15.875	6.35	6.35	2.4					○																			
	SNMM190608-HDR	19.05	19.05	6.35	7.94	0.8					○																			
	SNMM190612-HDR	19.05	19.05	6.35	7.94	1.2					○																			
	SNMM190616-HDR	19.05	19.05	6.35	7.94	1.6				○	○																			
	SNMM190624-HDR	19.05	19.05	6.35	7.94	2.4					○																			
	SNMM250724-HDR	25.4	25.4	7.94	9.12	2.4				★	○																			
	SNMM250924-HDR	25.4	25.4	9.525	9.12	2.4					○																			

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

MSDNN KAPR:45°

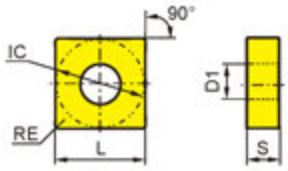
A161

PSKNR/L KAPR:75°

A197

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
HPR  For heavy machining	SNMM190616-HPR	19.5	19.05	6.35	7.94	1.6				★	○																			
	SNMM250924-HPR	25.4	25.4	9.525	9.12	2.4				★	○																			
TC 	SNMG120408-TC	12.7	12.7	4.76	5.16	0.8																				★				
	SNMG120412-TC	12.7	12.7	4.76	5.16	1.2																				★				
All round 	SNMG120404	12.7	12.7	4.76	5.16	0.4				○																				
	SNMG120408	12.7	12.7	4.76	5.16	0.8			○	○											●					○				
	SNMG120412	12.7	12.7	4.76	5.16	1.2				○																				
	SNMG120416	12.7	12.7	4.76	5.16	1.6				○																				
	SNMG150608	15.875	15.875	6.35	6.35	0.8				○																				
	SNMG150612	15.875	15.875	6.35	6.35	1.2				○																				
	SNMG190612	19.05	19.05	6.35	7.94	1.2				○																				
	SNMG190616	19.05	19.05	6.35	7.94	1.6				○																				
	SNMG250724	25.4	25.4	7.94	9.12	2.4				○																				
	SNMG250924	25.4	25.4	9.525	9.12	2.4				○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DSBNR/L KAPR:75°

Page A138

PSBNR/L KAPR:75°

A146

PSDNN KAPR:45°

A147

PSKNR/L KAPR:75°

A148

PSSNR/L KAPR:45°

A149

MSBNR/L KAPR:75°

A158

MSRNR/L KAPR:75°

A159

MSKNR/L KAPR:75°

Page A160

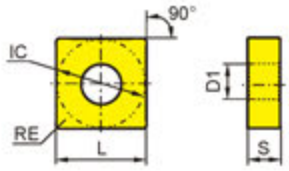
MSDNN KAPR:45°

A161

PSKNR/L KAPR:75°

A197

SN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

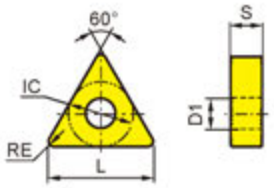
Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
Without chipbreaker 	SNMA090304	9.525	9.525	3.18	3.81	0.4																				○				
	SNMA090308	9.525	9.525	3.18	3.81	0.8																		○	○					
	SNMA120404	12.7	12.7	4.76	5.16	0.4																		○						
	SNMA120408	12.7	12.7	4.76	5.16	0.8																		○	★	★				●
	SNMA120416	12.7	12.7	4.76	5.16	1.6																		○	○	★				
	SNMA150608	15.875	15.875	6.35	6.35	0.8																				○				
	SNMA150612	15.875	15.875	6.35	6.35	1.2																				★				
	SNMA190612	19.05	19.05	6.35	7.94	1.2																		○	○	★				
	SNMA190616	19.05	19.05	6.35	7.94	1.6																			★	★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XF  For finishing	TNMG160404-XF	16.5	9.525	4.76	3.81	0.4	★	★																						
	TNMG160408-XF	16.5	9.525	4.76	3.81	0.8	★	★																						
DF  For finishing	TNMG160404-DF	16.5	9.525	4.76	3.81	0.4			★	★											○						●			
	TNMG160408-DF	16.5	9.525	4.76	3.81	0.8			★	★																	●			
	TNMG160412-DF	16.5	9.525	4.76	3.81	1.2			○	○																				
	TNMG220408-DF	22	12.7	4.76	5.16	0.8			★	○																				
	TNMG220412-DF	22	12.7	4.76	5.16	1.2			○																					
SF  For finishing	TNMG110304-SF	11	6.35	3.18	2.26	0.4						○															○	★		
	TNMG160404-SF	16.5	9.525	4.76	3.81	0.4						○						★									○	★		
	TNMG160408-SF	16.5	9.525	4.76	3.81	0.8						○						★									○	★		
	TNMG220408-SF	22	12.7	4.76	5.16	0.8						○															○	★		
	TNMG220412-SF	22	12.7	4.76	5.16	1.2						○															○	★		

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

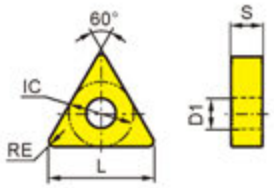
MTFNR/L KAPR:91°

Page A165

PTFNR/L KAPR:90°

A198

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😐	😊								😊	😊		
M Stainless steel						😊		😐	😐	😐	😐	😐		😊	😊	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EF  For finishing	TNMG110304-EF	11	6.35	3.18	2.26	0.4								○	★					★	○									
	TNMG110308-EF	11	6.35	3.18	2.26	0.8								○	★					★	○									
	TNMG160404-EF	16.5	9.525	4.76	3.81	0.4								●	★	★				★	★									
	TNMG160408-EF	16.5	9.525	4.76	3.81	0.8								●	★	★				★	★									
	TNMG160412-EF	16.5	9.525	4.76	3.81	1.2								○	★					★	★									
	TNMG220404-EF	22	12.7	4.76	5.16	0.4								○	★					★	○									
	TNMG220408-EF	22	12.7	4.76	5.16	0.8								○	★					★	○									
	TNMG220412-EF	22	12.7	4.76	5.16	1.2								○	★					★	○									
ES  For finishing	TNMG160404-ES	16.5	9.525	4.76	3.81	0.4											★													
	TNMG160408-ES	16.5	9.525	4.76	3.81	0.8											★													
	TNMG160412-ES	16.5	9.525	4.76	3.81	1.2											★													
ADF  For finishing	TNMG160404-ADF	16.5	9.525	4.76	3.81	0.4											★	★												
	TNMG160408-ADF	16.5	9.525	4.76	3.81	0.8											★	★												
	TNMG160412-ADF	16.5	9.525	4.76	3.81	1.2											★	★												

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

MTFNR/L KAPR:91°

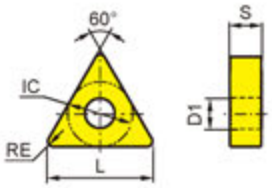
Page A165

PTFNR/L KAPR:90°

A198

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet: Coated cermet		Cemented carbide	
PM  For semi-finishing	TNMG110304-PM	11	6.35	3.18	2.26	0.4			★	○																				
	TNMG110308-PM	11	6.35	3.18	2.26	0.8			★	○																				
	TNMG160404-PM	16.5	9.525	4.76	3.81	0.4			★	★															★	★				
	TNMG160408-PM	16.5	9.525	4.76	3.81	0.8			★	★		○													★	★				
	TNMG160412-PM	16.5	9.525	4.76	3.81	1.2			★	○															★	★				
	TNMG220408-PM	22	12.7	4.76	5.16	0.8			★	○															★	○				
	TNMG220412-PM	22	12.7	4.76	5.16	1.2			★	○															○	○				
	TNMG220416-PM	22	12.7	4.76	5.16	1.6				○																○				
XM  For semi-finishing	TNMG160404-XM	16.5	9.525	4.76	3.81	0.4	★	★																						
	TNMG160408-XM	16.5	9.525	4.76	3.81	0.8	★	★																						
	TNMG160412-XM	16.5	9.525	4.76	3.81	1.2	★	★																						
	TNMG160416-XM	16.5	9.525	4.76	3.81	1.6	★	★																						
	TNMG220408-XM	22	12.7	4.76	5.16	0.8	★	★																						
	TNMG220412-XM	22	12.7	4.76	5.16	1.2	★	★																						
	TNMG220416-XM	22	12.7	4.76	5.16	1.6	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

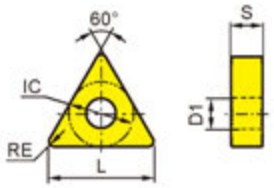
MTFNR/L KAPR:91°

Page A165

PTFNR/L KAPR:90°

A198

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😃	😊	😃	😟	😊		😃	😃	😃	😃	😟	😊								😊	😊		
M Stainless steel						😊		😃	😃	😃	😃			😊	😃	😃					😊	😊		
K Cast iron																		😊	😃	😟				😟
N Non-ferrous metal																							😃	😟
S Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
DM  For semi-finishing	TNMG110308-DM	11	6.35	3.18	2.26	0.8			○	○																				
	TNMG160404-DM	16.5	9.525	4.76	3.81	0.4			★	★				○													●			
	TNMG160408-DM	16.5	9.525	4.76	3.81	0.8			★	★				●							●						○			
	TNMG160412-DM	16.5	9.525	4.76	3.81	1.2			○	★																				
	TNMG220404-DM	22	12.7	4.76	5.16	0.4			★	★											○									
	TNMG220408-DM	22	12.7	4.76	5.16	0.8			★	★											○						○			
	TNMG220412-DM	22	12.7	4.76	5.16	1.2			○	○																				
	TNMG220416-DM	22	12.7	4.76	5.16	1.6			○	○																				
EM  For semi-finishing	TNMG160404-EM	16.5	9.525	4.76	3.81	0.4								●	★	★				★		★								
	TNMG160408-EM	16.5	9.525	4.76	3.81	0.8								●	★	★				★		★								
	TNMG160412-EM	16.5	9.525	4.76	3.81	1.2								○	★					★		★								
	TNMG220408-EM	22	12.7	4.76	5.16	0.8								●	★					○		★								
	TNMG220412-EM	22	12.7	4.76	5.16	1.2								○	★					○		★								
	TNMG220416-EM	22	12.7	4.76	5.16	1.6								○	★					○		★								
EG  For semi-finishing	TNMG160404-EG	16.5	9.525	4.76	3.81	0.4											★													
	TNMG160408-EG	16.5	9.525	4.76	3.81	0.8											★													
	TNMG160412-EG	16.5	9.525	4.76	3.81	1.2											★													

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

MTFNR/L KAPR:91°

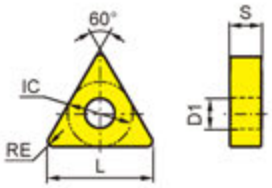
Page A165

PTFNR/L KAPR:90°

A198

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐			😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide
EH  For semi-finishing	TNMG160408-EH	16.5	9.525	4.76	3.81	0.8										★														
LR  Light-load roughing	TNMM160408-LR	16.5	9.525	4.76	3.81	0.8				★																				
	TNMM160412-LR	16.5	9.525	4.76	3.81	1.2				★																				
	TNMM220408-LR	22	12.7	4.76	5.16	0.8				★																				
	TNMM220412-LR	22	12.7	4.76	5.16	1.2				★																				
	TNMM220416-LR	22	12.7	4.76	5.16	1.6				★																				
DR  Light-load roughing	TNMG160408-DR	16.5	9.525	4.76	3.81	0.8			○	○															○	○				
	TNMG160412-DR	16.5	9.525	4.76	3.81	1.2			○	○															●	●				
	TNMG220408-DR	22	12.7	4.76	5.16	0.8				○															○					
	TNMG220412-DR	22	12.7	4.76	5.16	1.2				○																○				
	TNMG220416-DR	22	12.7	4.76	5.16	1.6				○															○					
	TNMG270608-DR	27.5	15.875	6.35	6.35	0.8				○																				
	TNMG270612-DR	27.5	15.875	6.35	6.35	1.2				○																				
	TNMG270616-DR	27.5	15.875	6.35	6.35	1.6				○																				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

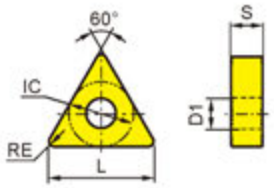
MTFNR/L KAPR:91°

Page A165

PTFNR/L KAPR:90°

A198

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
DR  For roughing	TNMM160408-DR	16.5	9.525	4.76	3.81	0.8				○																				
	TNMM160412-DR	16.5	9.525	4.76	3.81	1.2				○																				
	TNMM220408-DR	22	12.7	4.76	5.16	0.8				○																				
	TNMM220412-DR	22	12.7	4.76	5.16	1.2				○																				
	TNMM220416-DR	22	12.7	4.76	5.16	1.6				○																				
	TNMM270612-DR	27.5	15.875	6.35	5.16	1.2				○																				
	TNMM270616-DR	27.5	15.875	6.35	5.16	1.6				○																				
ER  For roughing	TNMG160408-ER	16.5	9.525	4.76	3.81	0.8																★								
	TNMG160412-ER	16.5	9.525	4.76	3.81	1.2																★								
	TNMG220408-ER	22	12.7	4.76	5.16	0.8																★								
	TNMG220412-ER	22	12.7	4.76	5.16	1.2																★								
SNR  For roughing	TNMG160408-SNR	16.5	9.525	4.76	3.81	0.8						○	●			○							★							

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

MTFNR/L KAPR:91°

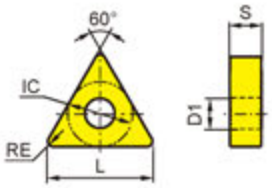
Page A165

PTFNR/L KAPR:90°

A198

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹️	😊		😃	😃		☹️	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹️				☹️
N	Non-ferrous metal																							😃	☹️
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Cemented carbide	
HDR  For heavy machining	TNMM160408-HDR	16.5	9.525	4.76	3.81	0.8					○																			
	TNMM160412-HDR	16.5	9.525	4.76	3.81	1.2					○																			
	TNMM220408-HDR	22	12.7	4.76	5.16	0.8					○																			
	TNMM220412-HDR	22	12.7	4.76	5.16	1.2					○																			
	TNMM220416-HDR	22	12.7	4.76	5.16	1.6					○																			
	TNMM270612-HDR	27.5	15.875	6.35	6.35	1.2					○																			
	TNMM270616-HDR	27.5	15.875	6.35	6.35	1.6					○																			
	TNMM270624-HDR	27.5	15.875	6.35	6.35	2.4					○																			
TC 	TNMG160404-TC	16.5	9.525	4.76	3.81	0.4																				★				
	TNMG160408-TC	16.5	9.525	4.76	3.81	0.8																				★				
	TNMG160412-TC	16.5	9.525	4.76	3.81	1.2																				★				
	TNMG220412-TC	22	12.7	4.76	5.16	1.2																				★				
	TNMG220416-TC	22	12.7	4.76	5.16	1.6																				★				
Without chipbreaker 	TNMA160404	16.5	9.525	4.76	3.81	0.4																		○	★	★				
	TNMA160408	16.5	9.525	4.76	3.81	0.8																		★	★	★				○
	TNMA160412	16.5	9.525	4.76	3.81	1.2																		★	○	○				
	TNMA160416	16.5	9.525	4.76	3.81	1.6																		○	○	○				
	TNMA220404	22	12.7	4.76	5.16	0.4																		○	○	○				
	TNMA220408	22	12.7	4.76	5.16	0.8																		○	○	○				
	TNMA270616	27.5	15.875	6.35	6.35	1.6																				○				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DTGNR/L KAPR:91°

Page A139

PTFNR/L KAPR:91°

A150

PTTNR/L KAPR:60°

A151

PTGNR/L KAPR:90°

A152

MTGNR/L KAPR:90°

A162

MTJNR/L KAPR:93°

A163

MTJNR/L-Z KAPR:93°

A164

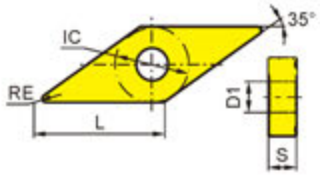
MTFNR/L KAPR:91°

Page A165

PTFNR/L KAPR:90°

A198

VN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐		😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
XF	VNMG160404-XF	16.6	9.525	4.76	3.81	0.4	★	★																						
	VNMG160408-XF	16.6	9.525	4.76	3.81	0.8	★	★																						
	VNMG160412-XF	16.6	9.525	4.76	3.81	1.2	★	★																						
For finishing																														
DF	VNMG160404-DF	16.6	9.525	4.76	3.81	0.4			★	★											●									
	VNMG160408-DF	16.6	9.525	4.76	3.81	0.8			★	○																				
For finishing																														
EF	VNMG160404-EF	16.6	9.525	4.76	3.81	0.4								○	★				★	★										
	VNMG160408-EF	16.6	9.525	4.76	3.81	0.8								○	★				★	★										
	VNMG160412-EF	16.6	9.525	4.76	3.81	1.2								○	★				★	○										
For finishing																														
ADF	VNMG160404-ADF	16.6	9.525	4.76	3.81	0.4										★	★													
	VNMG160408-ADF	16.6	9.525	4.76	3.81	0.8										★	★													
For finishing																														
NF	VNEG160404-NF	16.6	9.525	4.76	3.81	0.4						○	★										★						○	
	VNEG160408-NF	16.6	9.525	4.76	3.81	0.8						○	★																○	
For finishing																														

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DVVNN KAPR:72°30'

Page A140

DVJNR/L KAPR:93°

A140

MVVNN KAPR:72°30'

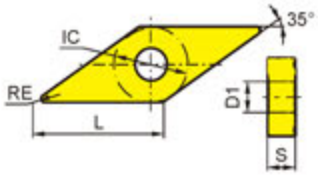
A166

MVJNR/L KAPR:93°

A167

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

VN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
NGF	VNEG160408-NGF	16.6	9.525	4.76	3.81	0.8						○	●			○														
	VNEG160412-NGF	16.6	9.525	4.76	3.81	1.2						○	●			○														
For finishing																														
SF	VNMG160404-SF	16.6	9.525	4.76	3.81	0.4						○						★									○	★		
	VNMG160408-SF	16.6	9.525	4.76	3.81	0.8						○						★									○			
For finishing																														
PM	VNMG160404-PM	16.6	9.525	4.76	3.81	0.4			★	○																○				
	VNMG160408-PM	16.6	9.525	4.76	3.81	0.8			★	○															★	★				
	VNMG160412-PM	16.6	9.525	4.76	3.81	1.2				○															○	○				
For semi-finishing																														
XM	VNMG160404-XM	16.6	9.525	4.76	3.81	0.4	★	★																						
	VNMG160408-XM	16.6	9.525	4.76	3.81	0.8	★	★																						
	VNMG160412-XM	16.6	9.525	4.76	3.81	1.2	★	★																						
For semi-finishing																														
DM	VNMG160408-DM	16.6	9.525	4.76	3.81	0.8			★	★											○									
	VNMG160412-DM	16.6	9.525	4.76	3.81	1.2			○	○											○									
For semi-finishing																														

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DVVNN KAPR:72°30'

Page A140

DVJNR/L KAPR:93°

A140

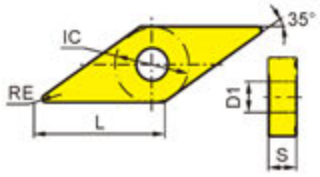
MVVNN KAPR:72°30'

A166

MVJNR/L KAPR:93°

A167

VN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	☹	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐			😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EM  For semi-finishing	VNMG160404-EM	16.6	9.525	4.76	3.81	0.4								●	★	★					★	★								
	VNMG160408-EM	16.6	9.525	4.76	3.81	0.8								●	★	★					★	★								
EG  For semi-finishing	VNMG160404-EG	16.6	9.525	4.76	3.81	0.4											★													
	VNMG160408-EG	16.6	9.525	4.76	3.81	0.8											★													
NM  For semi-finishing	VNMG160412-NM	16.6	9.525	4.76	3.81	1.2						○	★										○						○	
SNR  For roughing	VNMG160408-SNR	16.6	9.525	4.76	3.81	0.8						○	●				○						★							
	VNMG160412-SNR	16.6	9.525	4.76	3.81	1.2						○	●				○						★							
TC 	VNMG160404-TC	16.6	9.525	4.76	3.81	0.4																				★				
	VNMG160408-TC	16.6	9.525	4.76	3.81	0.8																				★				
	VNMG160412-TC	16.6	9.525	4.76	3.81	1.2																				★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DVVNN KAPR:72°30'

Page A140

DVJNR/L KAPR:93°

A140

MVVNN KAPR:72°30'

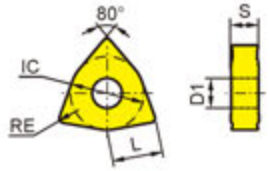
A166

MVJNR/L KAPR:93°

A167

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

WN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😃	😊	😃	😟	😊		😃	😃		😟	😊									😊	😊		
M Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K Cast iron																		😊	😃	😟				😟
N Non-ferrous metal																							😃	😟
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet	Coated cermet	Cemented carbide	
XF  For finishing	WNMG060404-XF	6.5	9.525	4.76	3.81	0.4	★	★																						
	WNMG060408-XF	6.5	9.525	4.76	3.81	0.8	★	★																						
	WNMG080404-XF	8.7	12.7	4.76	5.16	0.4	★	★																						
	WNMG080408-XF	8.7	12.7	4.76	5.16	0.8	★	★																						
	WNMG080412-XF	8.7	12.7	4.76	5.16	1.2	★	★																						
DF  For finishing	WNMG06T304-DF	6.5	9.525	3.97	3.81	0.4			★																					
	WNMG06T308-DF	6.5	9.525	3.97	3.81	0.8			★	★																				
	WNMG06T312-DF	6.5	9.525	3.97	3.81	1.2			★	★																				
	WNMG060404-DF	6.5	9.525	4.76	3.81	0.4			★	★											○									
	WNMG060408-DF	6.5	9.525	4.76	3.81	0.8			★	★											●									
	WNMG060412-DF	6.5	9.525	4.76	3.81	1.2			★	○											○									
	WNMG080404-DF	8.7	12.7	4.76	5.16	0.4			★	○											○									
	WNMG080408-DF	8.7	12.7	4.76	5.16	0.8			★	★											●									
	WNMG080412-DF	8.7	12.7	4.76	5.16	1.2			○	○																				
SF  For finishing	WNMG06T304-SF	6.5	9.525	3.97	3.81	0.4						○															○	★		
	WNMG06T308-SF	6.5	9.525	3.97	3.81	0.8						○															○			
	WNMG06T312-SF	6.5	9.525	3.97	3.81	1.2						○															○			
	WNMG060404-SF	6.5	9.525	4.76	3.81	0.4						○															○	★		
	WNMG060408-SF	6.5	9.525	4.76	3.81	0.8						○															○	★		
	WNMG080404-SF	8.7	12.7	4.76	5.16	0.4						○						★									○	★		
	WNMG080408-SF	8.7	12.7	4.76	5.16	0.8						○						★									○	★		
	WNMG080412-SF	8.7	12.7	4.76	5.16	1.2						○						★									○			

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

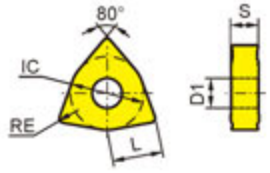
MWLNR/L KAPR:95°

A168

PWLNR/L KAPR:95°

A199

WN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	😟	😊		😐	😐	😐	😐	😐	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐	😐		😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	😟				😟
N	Non-ferrous metal																							😐	😟
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EF  For finishing	WNMG06T304-EF	6.5	9.525	3.97	3.81	0.4								○	★					★	○									
	WNMG06T308-EF	6.5	9.525	3.97	3.81	0.8								○	★					★	○									
	WNMG06T312-EF	6.5	9.525	3.97	3.81	1.2								○	★					★	○									
	WNMG060404-EF	6.5	9.525	4.76	3.81	0.4								●	★					★	○									
	WNMG060408-EF	6.5	9.525	4.76	3.81	0.8								●	★					★	○									
	WNMG080404-EF	8.7	12.7	4.76	5.16	0.4						○		●	★	★				★	★									
	WNMG080408-EF	8.7	12.7	4.76	5.16	0.8						○		●	★	★				★	★									
ES  For finishing	WNMG080404-ES	8.7	12.7	4.76	5.16	0.4											★													
	WNMG080408-ES	8.7	12.7	4.76	5.16	0.8											★													
ADF  For finishing	WNMG060404-ADF	6.5	9.525	4.76	3.81	0.4											★	★												
	WNMG060408-ADF	6.5	9.525	4.76	3.81	0.8											★	★												
	WNMG080404-ADF	8.7	12.7	4.76	5.16	0.4											★	★												
	WNMG080408-ADF	8.7	12.7	4.76	5.16	0.8											★	★												
	WNMG080412-ADF	8.7	12.7	4.76	5.16	1.2											★	★												
NF  For finishing	WNEG080404-NF	8.7	12.7	4.76	5.16	0.4						○	★																○	
	WNEG080408-NF	8.7	12.7	4.76	5.16	0.8						○	★																○	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

MWLNR/L KAPR:95°

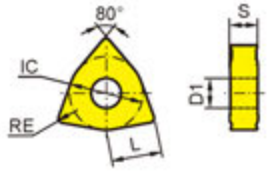
A168

PWLNR/L KAPR:95°

A199

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

WN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	
M	Stainless steel	
K	Cast iron	
N	Non-ferrous metal	
S	Heat resistant alloy, Ti alloy	

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																			Cermet		Cemented carbide	
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
PM  For semi-finishing	WNMG060408-PM	6.5	9.525	4.76	3.81	0.8			★	○															★	★				
	WNMG060412-PM	6.5	9.525	4.76	3.81	1.2			○	○															★	★				
	WNMG080404-PM	8.7	12.7	4.76	5.16	0.4			○	○																				
	WNMG080408-PM	8.7	12.7	4.76	5.16	0.8			★	★															★	★				
	WNMG080412-PM	8.7	12.7	4.76	5.16	1.2			★	★															★	★				
	WNMG080416-PM	8.7	12.7	4.76	5.16	1.6				○															○	○				
	WNMG080608-PM	8.7	12.7	6.35	5.16	0.8				○																				
XM  For semi-finishing	WNMG060404-XM	6.5	9.525	4.76	3.81	0.4	★	★																						
	WNMG060408-XM	6.5	9.525	4.76	3.81	0.8	★	★																						
	WNMG060412-XM	6.5	9.525	4.76	3.81	1.2	★	★																						
	WNMG080404-XM	8.7	12.7	4.76	5.16	0.4	★	★																						
	WNMG080408-XM	8.7	12.7	4.76	5.16	0.8	★	★																						
	WNMG080412-XM	8.7	12.7	4.76	5.16	1.2	★	★																						
	WNMG080416-XM	8.7	12.7	4.76	5.16	1.6	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

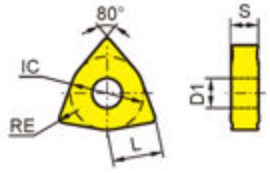
MWLNR/L KAPR:95°

A168

PWLNR/L KAPR:95°

A199

WN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	😟	😊		😐	😐	😐	😐	😟	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐			😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	😟				😟
N	Non-ferrous metal																							😐	😟
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
DM  For semi-finishing	WNMG06T304-DM	6.5	9.525	3.97	3.81	0.4				○																				
	WNMG06T308-DM	6.5	9.525	3.97	3.81	0.8				○																				
	WNMG06T312-DM	6.5	9.525	3.97	3.81	1.2				○																				
	WNMG060408-DM	6.5	9.525	4.76	3.81	0.8			★	★											●									
	WNMG060412-DM	6.5	9.525	4.76	3.81	1.2				○																				
	WNMG080404-DM	8.7	12.7	4.76	5.16	0.4			★	★				○							○									
	WNMG080408-DM	8.7	12.7	4.76	5.16	0.8			★	★											○									
	WNMG080412-DM	8.7	12.7	4.76	5.16	1.2			★	★											○									
	WNMG080416-DM	8.7	12.7	4.76	5.16	1.6				○																				
EM  For semi-finishing	WNMG06T304-EM	6.5	9.525	3.97	3.81	0.4								○	★					○		★								
	WNMG06T308-EM	6.5	9.525	3.97	3.81	0.8								○	★					○		★								
	WNMG06T312-EM	6.5	9.525	3.97	3.81	1.2								○	★					○		★								
	WNMG060404-EM	6.5	9.525	4.76	3.81	0.4								○	★					○		★								
	WNMG060408-EM	6.5	9.525	4.76	3.81	0.8								●	★					○		★								
	WNMG080404-EM	8.7	12.7	4.76	5.16	0.4								●	★	★				★		★								
	WNMG080408-EM	8.7	12.7	4.76	5.16	0.8								●	★	★				★		★								
	WNMG080412-EM	8.7	12.7	4.76	5.16	1.2								●	★	★				★		★								
EG  For semi-finishing	WNMG080404-EG	8.7	12.7	4.76	5.16	0.4											★													
	WNMG080408-EG	8.7	12.7	4.76	5.16	0.8											★													
	WNMG080412-EG	8.7	12.7	4.76	5.16	1.2											★													

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

MWLNR/L KAPR:95°

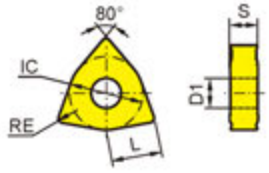
A168

PWLNR/L KAPR:95°

A199

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

WN□□ (Negative inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐			😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EH  For semi-finishing	WNMG080404-EH	8.7	12.7	4.76	5.16	0.4										★														
	WNMG080408-EH	8.7	12.7	4.76	5.16	0.8										★														
	WNMG080412-EH	8.7	12.7	4.76	5.16	1.2										★														
NM  For semi-finishing	WNMG080408-NM	8.7	12.7	4.76	5.16	0.8						○	★										○						○	
	WNMG080412-NM	8.7	12.7	4.76	5.16	1.2						○	★										○						○	
DR  For roughing	WNMG060408-DR	6.5	9.525	4.76	3.81	0.8			○	○															○					
	WNMG060412-DR	6.5	9.525	4.76	3.81	1.2				○															○	○				
	WNMG080408-DR	8.7	12.7	4.76	5.16	0.8			○	★															●	●				
	WNMG080412-DR	8.7	12.7	4.76	5.16	1.2			○	★															●	●				
	WNMG080416-DR	8.7	12.7	4.76	5.16	1.6				○															○	○				
SNR  For roughing	WNMG080408-SNR	8.7	12.7	4.76	5.16	0.8						○	●			○							★							
	WNMG080412-SNR	8.7	12.7	4.76	5.16	1.2						○	●			○							★							

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

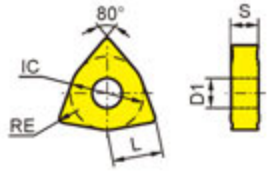
MWLNR/L KAPR:95°

A168

PWLNR/L KAPR:95°

A199

WN□□ (Negative inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide
TC 	WNMG080404-TC	8.7	12.7	4.76	5.16	0.4																				★				
	WNMG080408-TC	8.7	12.7	4.76	5.16	0.8																				★				
	WNMG080412-TC	8.7	12.7	4.76	5.16	1.2																				★				
Without chipbreaker 	WNMA06T308	6.5	9.525	3.97	3.81	0.8																		○						
	WNMA060404	6.5	9.525	4.76	3.81	0.4																				○				
	WNMA060408	6.5	9.525	4.76	3.81	0.8																		★	○	○				
	WNMA060412	6.5	9.525	4.76	3.81	1.2																				○				
	WNMA080404	8.7	12.7	4.76	5.16	0.4																			○					
	WNMA080408	8.7	12.7	4.76	5.16	0.8																		★	★	★				
	WNMA080412	8.7	12.7	4.76	5.16	1.2																		★	★	★				
	WNMA080416	8.7	12.7	4.76	5.16	1.6																				★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

DWLNR/L KAPR:95°

Page A141

PWLNR/L KAPR:95°

A153

MWLNR/L KAPR:95°

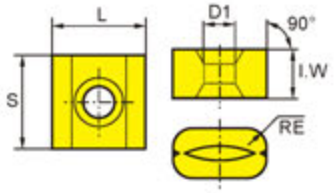
A168

PWLNR/L KAPR:95°

A199

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

LN□□ (Negative inserts)



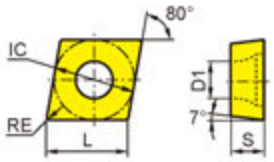
Good working condition · Normal working condition · Bad working condition

Workpiece material																																			
P Steel	😊	😐	😊	😐	☹	😊			😐	😐			☹	😊											😊	😊									
M Stainless steel						😊			😐	😐						😊	😊	😐	😐						😊	😊									
K Cast iron																						😊	😐	☹											☹
N Non-ferrous metal																																		😐	☹
S Heat resistant alloy, Ti alloy						😊	😊					😊									😊													😊	

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide	
		L	I.W	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201	
RF 	LNUX191940-RF	19.05	10.0	19.05	6.35	4.0	★																								
	LNUX301940-RF	30.0	12.0	19.05	6.35	4.0	★																								
RH 	LNUX191940-RH	19.05	10.0	19.05	6.35	4.0	★																								
	LNUX301940-RH	30.0	12.0	19.05	6.35	4.0	★																								

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

CC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K Cast iron																		Good	Normal	Bad				Bad
N Non-ferrous metal																							Normal	Bad
S Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	CCGT060202-SF	6.4	6.35	2.38	2.8	0.2						○															○	○		
	CCGT060204-SF	6.4	6.35	2.38	2.8	0.4						○						★									○	○		
	CCGT09T304-SF	9.7	9.525	3.97	4.4	0.4						○						★									○	★		
XF  For finishing	CCMT060202-XF	6.4	6.35	2.38	2.8	0.2	★	★																						
	CCMT060204-XF	6.4	6.35	2.38	2.8	0.4	★	★																						
	CCMT060208-XF	6.4	6.35	2.38	2.8	0.8	★	★																						
	CCMT09T302-XF	9.7	9.525	3.97	4.4	0.2	★	★																						
	CCMT09T304-XF	9.7	9.525	3.97	4.4	0.4	★	★																						
	CCMT09T308-XF	9.7	9.525	3.97	4.4	0.8	★	★																						
HF  For finishing	CCMT060202-HF	6.4	6.35	2.38	2.8	0.2			★	★				●													○			○
	CCMT060204-HF	6.4	6.35	2.38	2.8	0.4			★	○				●												●	●		●	
	CCMT060208-HF	6.4	6.35	2.38	2.8	0.8			★					●							○						●			
	CCMT09T302-HF	9.7	9.525	3.97	4.4	0.2				○				●													●			○
	CCMT09T304-HF	9.7	9.525	3.97	4.4	0.4			★	★				●											●	●	●	○		○
	CCMT09T308-HF	9.7	9.525	3.97	4.4	0.8			★	○				●							○			○	○	○	●		○	○
	CCMT120404-HF	12.9	12.7	4.76	5.56	0.4			○	○																●	○			
	CCMT120408-HF	12.9	12.7	4.76	5.56	0.8			○																					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


SCACR/L KAPR:90°
Page A196


SCLCR/L KAPR:95°
A170

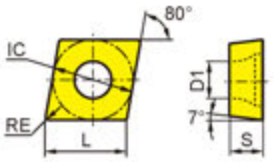

SCLCR/L KAPR:95°
A200


SCFCR/L KAPR:90°
A214


SCLCR/L KAPR:95°
A215

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😐	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐	😐		😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Cemented carbide	
EF  For finishing	CCMT060202-EF	6.4	6.35	2.38	2.8	0.2						○		●	★					★	○									
	CCMT060204-EF	6.4	6.35	2.38	2.8	0.4						○		●	★	★				★	○									
	CCMT09T302-EF	9.7	9.525	3.97	4.4	0.2						○		●	★					★	○									
	CCMT09T304-EF	9.7	9.525	3.97	4.4	0.4						○		●	★	★				★	★									
	CCMT09T308-EF	9.7	9.525	3.97	4.4	0.8						○		●	★					○	★									
	CCMT120404-EF	12.9	12.7	4.76	5.56	0.4						○		●	★					★	○									
	CCMT120408-EF	12.9	12.7	4.76	5.56	0.8						○		●	★					○	○									
AHF  For finishing	CCMT060204-AHF	6.4	6.35	2.38	2.8	0.4											★	★					★							
	CCMT060208-AHF	6.4	6.35	2.38	2.8	0.8											★	★												
	CCMT09T304-AHF	9.7	9.525	3.97	4.4	0.4											★	★					★							
	CCMT09T308-AHF	9.7	9.525	3.97	4.4	0.8											★	★												
	CCMT120404-AHF	12.9	12.7	4.76	5.56	0.4											★	★					★							
	CCMT120408-AHF	12.9	12.7	4.76	5.56	0.8											★	★												
XM  For semi-finishing	CCMT09T304-XM	9.7	9.525	3.97	4.4	0.4	★	★																						
	CCMT09T308-XM	9.7	9.525	3.97	4.4	0.8	★	★																						
	CCMT09T312-XM	9.7	9.525	3.97	4.4	1.2	★	★																						
	CCMT120404-XM	12.7	12.7	4.76	5.56	0.4	★	★																						
	CCMT120408-XM	12.7	12.7	4.76	5.56	0.8	★	★																						
	CCMT120412-XM	12.7	12.7	4.76	5.56	1.2	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


SCACR/L KAPR:90°
Page A196

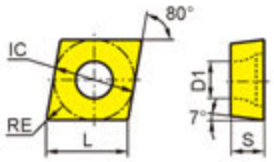

SCLCR/L KAPR:95°
A170


SCLCR/L KAPR:95°
A200


SCFCR/L KAPR:90°
A214


SCLCR/L KAPR:95°
A215

CC□□ (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	☹	😊								😊	😊		
M Stainless steel						😊		😐	😐	😐	😐			😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
HM  For semi-finishing	CCMT060204-HM	6.4	6.35	2.38	2.8	0.4			★	★				●							●				●	●				●
	CCMT060208-HM	6.4	6.35	2.38	2.8	0.8			★	○				●							○				○	●				
	CCMT09T304-HM	9.7	9.525	3.97	4.4	0.4			★	★				●							●				●	●				
	CCMT09T308-HM	9.7	9.525	3.97	4.4	0.8			★	★				●							●				●	●				
	CCMT120404-HM	12.9	12.7	4.76	5.56	0.4			★	○											○				○	○				
	CCMT120408-HM	12.9	12.7	4.76	5.56	0.8			★	★				○							●				●	●				
	CCMT120412-HM	12.9	12.7	4.76	5.56	1.2			○																○					
EM  For semi-finishing	CCMT060204-EM	6.4	6.35	2.38	2.8	0.4								●	★	★				○		★								
	CCMT060208-EM	6.4	6.35	2.38	2.8	0.8								●	★	★				○		★								
	CCMT09T304-EM	9.7	9.525	3.97	4.4	0.4								●	★	★				★		★								
	CCMT09T308-EM	9.7	9.525	3.97	4.4	0.8								●	★	★				★		★								
	CCMT120404-EM	12.9	12.7	4.76	5.56	0.4								●	★	★				○		★								
	CCMT120408-EM	12.9	12.7	4.76	5.56	0.8								●	★	★				○		★								
	CCMT120412-EM	12.9	12.7	4.76	5.56	1.2								●	★					○		★								
EG  For semi-finishing	CCMT060204-EG	6.4	6.35	2.38	2.8	0.4											★													
	CCMT060208-EG	6.4	6.35	2.38	2.8	0.8											★													
	CCMT09T304-EG	9.7	9.525	3.97	4.4	0.4											★													
	CCMT09T308-EG	9.7	9.525	3.97	4.4	0.8											★													

Inserts shape	Type	Cermet: YNG151	Coated cermet: YNG151C	Cemented carbide: YD101	Cemented carbide: YD201
HM	CCMT060204-HM				●
	CCMT060208-HM				
	CCMT09T304-HM				
	CCMT09T308-HM				
	CCMT120404-HM				
	CCMT120408-HM				
	CCMT120412-HM				
EM	CCMT060204-EM				
	CCMT060208-EM				
	CCMT09T304-EM				
	CCMT09T308-EM				
	CCMT120404-EM				
	CCMT120408-EM				
	CCMT120412-EM				
EG	CCMT060204-EG				
	CCMT060208-EG				
	CCMT09T304-EG				
	CCMT09T308-EG				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SCACR/L KAPR:90°

Page A196

SCLCR/L KAPR:95°

A170

SCLCR/L KAPR:95°

A200

SCFCR/L KAPR:90°

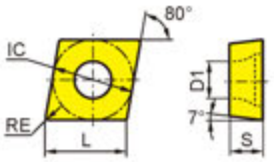
A214

SCLCR/L KAPR:95°

A215

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152C	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
HR  For roughing	CCMT060204-HR	6.4	6.35	2.38	2.8	0.4			○	○				○																
	CCMT060208-HR	6.4	6.35	2.38	2.8	0.8			○												●					●				
	CCMT09T304-HR	9.7	9.525	3.97	4.4	0.4								○																
	CCMT09T308-HR	9.7	9.525	3.97	4.4	0.8			★	★											●			●	●	●			●	
	CCMT120408-HR	12.9	12.7	4.76	5.56	0.8			★					○							●			●	●	●			●	●
	CCMT120412-HR	12.9	12.7	4.76	5.56	1.2			○												○				●	○				
TC 	CCMT060204-TC	6.4	6.35	2.38	2.8	0.4																				★				
	CCMT09T304-TC	9.7	9.525	3.97	4.4	0.4																				★				
	CCMT09T308-TC	9.7	9.525	3.97	4.4	0.8																				★				
	CCMT120404-TC	12.9	12.7	4.76	5.56	0.4																				★				
	CCMT120408-TC	12.9	12.7	4.76	5.56	0.8																				★				

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SCACR/L KAPR:90°

Page A196

SCLCR/L KAPR:95°

A170

SCLCR/L KAPR:95°

A200

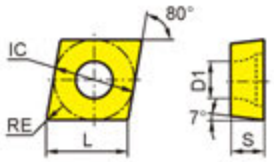
SCFCR/L KAPR:90°

A214

SCLCR/L KAPR:95°

A215

CC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LC  For Al machining	CCGX060202-LC	6.4	6.35	2.38	2.8	0.2																							★	
	CCGX060204-LC	6.4	6.35	2.38	2.8	0.4																							★	
	CCGX09T302-LC	9.7	9.525	3.97	4.4	0.2																							★	
	CCGX09T304-LC	9.7	9.525	3.97	4.4	0.4																							★	
	CCGX09T308-LC	9.7	9.525	3.97	4.4	0.8																							★	
	CCGX120404-LC	12.9	12.7	4.76	5.5	0.4																							★	
	CCGX120408-LC	12.9	12.7	4.76	5.5	0.8																							★	
LH  For Al machining	CCGX060202-LH	6.4	6.35	2.38	2.8	0.2																							★	
	CCGX060204-LH	6.4	6.35	2.38	2.8	0.4																							★	●
	CCGX060208-LH	6.4	6.35	2.38	2.8	0.8																							★	
	CCGX09T302-LH	9.7	9.525	3.97	4.4	0.2																							★	
	CCGX09T304-LH	9.7	9.525	3.97	4.4	0.4																							★	●
	CCGX09T308-LH	9.7	9.525	3.97	4.4	0.8																							★	
	CCGX120402-LH	12.9	12.7	4.76	5.56	0.2																							○	
	CCGX120404-LH	12.9	12.7	4.76	5.56	0.4																							★	
	CCGX120408-LH	12.9	12.7	4.76	5.56	0.8																							★	
	CCGX120412-LH	12.9	12.7	4.76	5.56	1.2																							○	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


SCACR/L KAPR:90°
Page A196


SCLCR/L KAPR:95°
A170

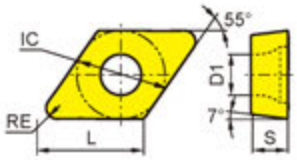

SCLCR/L KAPR:95°
A200


SCFCR/L KAPR:90°
A214


SCLCR/L KAPR:95°
A215

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M	Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K	Cast iron																		Good	Normal	Bad				Bad
N	Non-ferrous metal																							Normal	Bad
S	Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	DCGT070202-SF	7.8	6.35	2.38	2.8	0.2						○															○			
	DCGT070204-SF	7.8	6.35	2.38	2.8	0.4						○																○		
	DCGT070208-SF	7.8	6.35	2.38	2.8	0.8						○																		
	DCGT11T302-SF	11.6	9.525	3.97	4.4	0.2						○															○	○		
	DCGT11T304-SF	11.6	9.525	3.97	4.4	0.4						○						★										★		
	DCGT11T308-SF	11.6	9.525	3.97	4.4	0.8						○						★									○	○		
XF  For finishing	DCMT070202-XF	7.8	6.35	2.38	2.8	0.2	★	★																						
	DCMT070204-XF	7.8	6.35	2.38	2.8	0.4	★	★																						
	DCMT070208-XF	7.8	6.35	2.38	2.8	0.8	★	★																						
	DCMT11T302-XF	11.6	9.525	3.97	4.4	0.2	★	★																						
	DCMT11T304-XF	11.6	9.525	3.97	4.4	0.4	★	★																						
	DCMT11T308-XF	11.6	9.525	3.97	4.4	0.8	★	★																						
HF  For finishing	DCMT070202-HF	7.8	6.35	2.38	2.8	0.2			★	○				○													○			
	DCMT070204-HF	7.8	6.35	2.38	2.8	0.4			★	★				●												○	○		●	
	DCMT070208-HF	7.8	6.35	2.38	2.8	0.8			○																					
	DCMT11T302-HF	11.6	9.525	3.97	4.4	0.2			★	○				●													○			○
	DCMT11T304-HF	11.6	9.525	3.97	4.4	0.4			★	★				●											○	○	●			○
	DCMT11T308-HF	11.6	9.525	3.97	4.4	0.8			★	○				○													○			

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SDACR/L KAPR:90°

Page A171

SDJCR/L KAPR:93°

A172

SDNCN KAPR:62°30'

A173

SDQCR/L KAPR:107°30'

A201

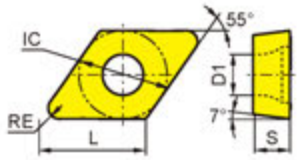
SDUCR/L KAPR:93°

A202

SDZCR/L KAPR:93°

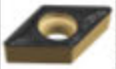
A203

DC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	😊😐😊😐☹️😊 😐😐😐😐😐😊 😊😊
M	Stainless steel	😊 😐😐😐😐😐 😊😊😐 😊😊
K	Cast iron	😊😐☹️ ☹️
N	Non-ferrous metal	😐☹️
S	Heat resistant alloy, Ti alloy	😊😊 😊 😊

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																		Cermet			
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
EF  For finishing	DCMT070202-EF	7.8	6.35	2.38	2.8	0.2						○		●	★					★	○									
	DCMT070204-EF	7.8	6.35	2.38	2.8	0.4						○		●	★					★	○									
	DCMT11T302-EF	11.6	9.525	3.97	4.4	0.2						○		●	★					★	○									
	DCMT11T304-EF	11.6	9.525	3.97	4.4	0.4						○		●	★	★				★	○									
	DCMT11T308-EF	11.6	9.525	3.97	4.4	0.8						○		●	★					○	○									
AHF  For finishing	DCMT070204-AHF	7.8	6.35	2.38	2.8	0.4											★	★												
	DCMT070208-AHF	7.8	6.35	2.38	2.8	0.8											★	★												
	DCMT11T302-AHF	11.6	9.525	3.97	4.4	0.2											★	★												
	DCMT11T304-AHF	11.6	9.525	3.97	4.4	0.4											★	★					★							
	DCMT11T308-AHF	11.6	9.525	3.97	4.4	0.8											★	★					★							
XM  For semi-finishing	DCMT070204-XM	7.8	6.35	2.38	2.8	0.4	★	★																						
	DCMT070208-XM	7.8	6.35	2.38	2.8	0.8	★	★																						
	DCMT11T304-XM	11.6	9.525	3.97	4.4	0.4	★	★																						
	DCMT11T308-XM	11.6	9.525	3.97	4.4	0.8	★	★																						
	DCMT11T312-XM	11.6	9.525	3.97	4.4	1.2	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SDACR/L KAPR:90°

Page A171

SDJCR/L KAPR:93°

A172

SDNCN KAPR:62°30'

A173

SDQCR/L KAPR:107°30'

A201

SDUCR/L KAPR:93°

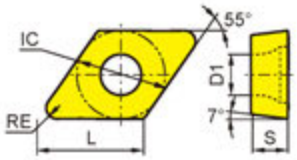
A202

SDZCR/L KAPR:93°

A203

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

DC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	😊😐😊😐☹️😊 😐😐😐 ☹️😊 😊😊
M	Stainless steel	😊 😐😐😐 😊😐😐 😊😊
K	Cast iron	😊😐☹️ ☹️
N	Non-ferrous metal	😐☹️
S	Heat resistant alloy, Ti alloy	😊😊 😊 😊 😊

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																			Cermet		Coated cermet	Cemented carbide	
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
HM  For semi-finishing	DCMT070204-HM	7.8	6.35	2.38	2.8	0.4			★	★				●							●					●				
	DCMT070208-HM	7.8	6.35	2.38	2.8	0.8			★	★				○							○					○				
	DCMT11T304-HM	11.6	9.525	3.97	4.4	0.4			★	★				●							●				●	●	●		●	○
	DCMT11T308-HM	11.6	9.525	3.97	4.4	0.8			★	★				●							●				●	○	○			○
	DCMT11T312-HM	11.6	9.525	3.97	4.4	1.2			○	○																				
EM  For semi-finishing	DCMT070204-EM	7.8	6.35	2.38	2.8	0.4								●	★	★				○		★								
	DCMT070208-EM	7.8	6.35	2.38	2.8	0.8								●	★					○		★								
	DCMT11T304-EM	11.6	9.525	3.97	4.4	0.4								●	★	★				○		★								
	DCMT11T308-EM	11.6	9.525	3.97	4.4	0.8								●	★	★				○		★								
HR  For roughing	DCMT11T304-HR	11.6	9.525	3.97	4.4	0.4			○	○											○				○	●				
	DCMT11T308-HR	11.6	9.525	3.97	4.4	0.8			●	★											○			○	●	●				
	DCMT11T312-HR	11.6	9.525	3.97	4.4	1.2			○																					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SDACR/L KAPR:90°

SDJCR/L KAPR:93°

SDNCN KAPR:62°30'

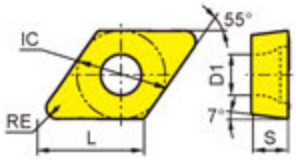
SDQCR/L KAPR:107°30'

SDUCR/L KAPR:93°

SDZCR/L KAPR:93°

Page A171 A172 A173 A201 A202 A203

DC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LC  For Al machining	DCGX070201-LC	7.8	6.35	2.38	2.8	0.1																							★	
	DCGX070202-LC	7.8	6.35	2.38	2.8	0.2																							★	
	DCGX070204-LC	7.8	6.35	2.38	2.8	0.4																							★	
	DCGX11T304-LC	11.6	9.525	3.97	4.4	0.4																							★	
	DCGX11T308-LC	11.6	9.525	3.97	4.4	0.8																							★	
LH  For Al machining	DCGX070202-LH	7.8	6.35	2.38	2.8	0.2																							★	
	DCGX070204-LH	7.8	6.35	2.38	2.8	0.4																							★	○
	DCGX11T302-LH	11.6	9.525	3.97	4.4	0.2																							★	○
	DCGX11T304-LH	11.6	9.525	3.97	4.4	0.4																							★	●
	DCGX11T308-LH	11.6	9.525	3.97	4.4	0.8																							★	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SDACR/L KAPR:90°

Page A171

SDJCR/L KAPR:93°

A172

SDNCN KAPR:62°30'

A173

SDQCR/L KAPR:107°30'

A201

SDUCR/L KAPR:93°

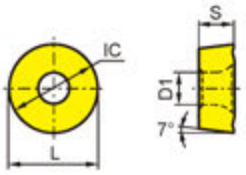
A202

SDZCR/L KAPR:93°

A203

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

RC□□ (Positive inserts)

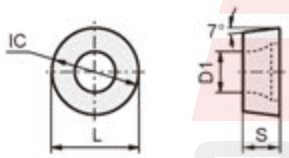


😊 Good working condition 😐 Normal working condition 😟 Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	😟	😊		😐	😐		😟	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	😟				😟
N	Non-ferrous metal																							😐	😟
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
	RCGT1204MO	12	12	4.76	4.4				○																				
	RCMT0803MO	8.0	8.0	3.18	3.36				○																				
	RCMT10T3MO	10	10	3.97	4.4				○																				
	RCMT1204MO	12	12	4.76	4.4				★														★	★	○				
	RCMT1606MO	16	16	6.35	5.5																		★						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order



😊 Good working condition 😐 Normal working condition 😟 Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	😟	😊		😐	😐		😟	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	😟				😟
N	Non-ferrous metal																							😐	😟
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LH  For Al machining	RCGX0803MO-LH	8.0	8.0	3.18	3.36																							★	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SRDCN

Page A186

SRGCR/L

A187

RC□□ (Positive inserts)

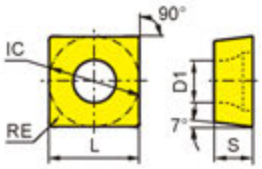
😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm)				Coated cemented carbide																	Cermet			
		L	IC	S	D1	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
	RCMX0803MO	8.0	8.0	3.18	3.36																		○						
	RCMX1003MO	10	10	3.18	3.6																							○	
	RCMX1204MO	12	12	4.76	4.4																							○	●
	RCMX1606MO	16	16	6.35	5.5																							○	
	RCMX2006MO	20	20	6.35	6.5			★	○																★			○	●
	RCMX2507MO	25	25	7.94	7.2			★	○																○				
	RCMX3209MO	32	32	9.52	9.5			○	○															●					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

SC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐		😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XF  For finishing	SCMT09T304-XF	9.525	9.525	3.97	4.4	0.4	★	★																						
	SCMT09T308-XF	9.525	9.525	3.97	4.4	0.8	★	★																						
HF  For finishing	SCMT09T302-HF	9.525	9.525	3.97	4.4	0.2			○					○																
	SCMT09T304-HF	9.525	9.525	3.97	4.4	0.4			●	○																				
	SCMT09T308-HF	9.525	9.525	3.97	4.4	0.8			●					○												○				○
EF  For finishing	SCMT09T302-EF	9.525	9.525	3.97	4.4	0.2						○		●	★				★	○										
	SCMT09T304-EF	9.525	9.525	3.97	4.4	0.4						○		●	★				★	○										
	SCMT09T308-EF	9.525	9.525	3.97	4.4	0.8						○		●	★				○	○										
AHF  For finishing	SCMT09T304-AHF	9.525	9.525	3.97	4.4	0.4										★	★													
	SCMT09T308-AHF	9.525	9.525	3.97	4.4	0.8										★	★													

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SSBCR/L KAPR:75°

Page A179

SSDCN KAPR:45°

A180

SSKCR/L KAPR:75°

A181

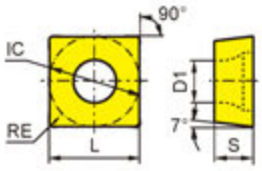
SSSCR/L KAPR:45°

A182

SSKCR/L KAPR:75°

A204

SC□□ (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐		☹	😊								😊	😊		
M Stainless steel						😊		😐	😐	😐				😊	😐	😐					😊	😊		
K Cast iron																		😊	😐	☹				☹
N Non-ferrous metal																							😐	☹
S Heat resistant alloy, Ti alloy						😊	😊				😊						😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XM  For semi-finishing	SCMT09T304-XM	9.525	9.525	3.97	4.4	0.4	★	★																						
	SCMT09T308-XM	9.525	9.525	3.97	4.4	0.8	★	★																						
	SCMT09T312-XM	9.525	9.525	3.97	4.4	1.2	★	★																						
	SCMT120408-XM	12.7	12.7	4.76	5.56	0.8	★	★																						
	SCMT120412-XM	12.7	12.7	4.76	5.56	1.2	★	★																						
HM  For semi-finishing	SCMT09T304-HM	9.525	9.525	3.97	4.4	0.4			○												●				●	●				
	SCMT09T308-HM	9.525	9.525	3.97	4.4	0.8			●	○				○							●				●	○				
	SCMT120404-HM	12.7	12.7	4.76	5.56	0.4			○																	●				
	SCMT120408-HM	12.7	12.7	4.76	5.56	0.8			●	○		●		○							●				●					
	SCMT120412-HM	12.7	12.7	4.76	5.56	1.2			○												○									
EM  For semi-finishing	SCMT09T304-EM	9.525	9.525	3.97	4.4	0.4								●	★					○		★								
	SCMT09T308-EM	9.525	9.525	3.97	4.4	0.8								●	★	★				○		★								
	SCMT120404-EM	12.7	12.7	4.76	5.56	0.4								●	★					○		★								
	SCMT120408-EM	12.7	12.7	4.76	5.56	0.8								●	★	★				○		★								
	SCMT120412-EM	12.7	12.7	4.76	5.56	1.2								●	★					○		★								

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SSBCR/L KAPR:75°

Page A179

SSDCN KAPR:45°

A180

SSKCR/L KAPR:75°

A181

SSSCR/L KAPR:45°

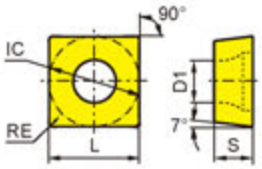
A182

SSKCR/L KAPR:75°

A204

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

SC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LC  For Al machining	SCGX09T304-LC	9.525	9.525	3.97	4.4	0.4																							★	
	SCGX09T308-LC	9.525	9.525	3.97	4.4	0.8																							★	
	SCGX120408-LC	12.7	12.7	4.76	5.5	0.8																							★	
LH  For Al machining	SCGX09T302-LH	9.525	9.525	3.97	4.4	0.2																							○	
	SCGX09T304-LH	9.525	9.525	3.97	4.4	0.4																							○	
	SCGX09T308-LH	9.525	9.525	3.97	4.4	0.8																							★	
	SCGX120404-LH	12.7	12.7	4.76	5.56	0.4																							○	
	SCGX120408-LH	12.7	12.7	4.76	5.56	0.8																							★	
HR  For roughing	SCMT09T304-HR	9.525	9.525	3.97	4.4	0.4			★					●												○				
	SCMT09T308-HR	9.525	9.525	3.97	4.4	0.8			★																●	●				
	SCMT09T312-HR	9.525	9.525	3.97	4.4	1.2			★																					
	SCMT120404-HR	12.7	12.7	4.76	5.56	0.4			○																					
	SCMT120408-HR	12.7	12.7	4.76	5.56	0.8			★	○				○										○	●	●				
	SCMT120412-HR	12.7	12.7	4.76	5.56	1.2			○															○	○					

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SSBCR/L KAPR:75°

Page A179

SSDCN KAPR:45°

A180

SSKCR/L KAPR:75°

A181

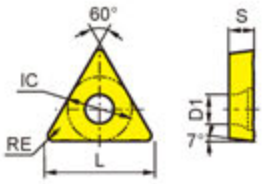
SSSCR/L KAPR:45°

A182

SSKCR/L KAPR:75°

A204

TC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material																																			
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊														😊	😊							
M	Stainless steel						😊		😐	😐					😊	😊	😐	😐									😊	😊							
K	Cast iron																				😊	😐	☹												☹
N	Non-ferrous metal																																	😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊									😊													😊		

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																				Cermet		Coated cermet	Cemented carbide	
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
SF  For extra finishing	TCGT06T102-SF	6.4	3.97	1.98	2.2	0.2						○																		
	TCGT06T104-SF	6.4	3.97	1.98	2.2	0.4						○																○		
	TCGT090202-SF	9.6	5.56	2.38	2.5	0.2						○																		
	TCGT090204-SF	9.6	5.56	2.38	2.5	0.4						○																○		
	TCGT090208-SF	9.6	5.56	2.38	2.5	0.8						○																		
	TCGT110302-SF	11	6.35	3.18	2.8	0.2						○															○			
	TCGT110304-SF	11	6.35	3.18	2.8	0.4						○						★									○	○		
	TCGT110308-SF	11	6.35	3.18	2.8	0.8						○																		
XF  For finishing	TCMT090202-XF	9.6	5.56	2.38	2.5	0.2	★	★																						
	TCMT090204-XF	9.6	5.56	2.38	2.5	0.4	★	★																						
	TCMT110202-XF	11	6.35	2.38	2.8	0.2	★	★																						
	TCMT110204-XF	11	6.35	2.38	2.8	0.4	★	★																						
	TCMT110208-XF	11	6.35	2.38	2.8	0.8	★	★																						
	TCMT16T304-XF	16.5	9.525	3.97	4.4	0.4	★	★																						
	TCMT16T308-XF	16.5	9.525	3.97	4.4	0.8	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


STACR/L
KAPR:90°
Page A183

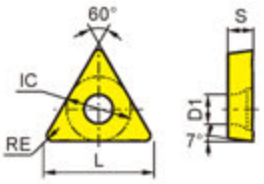

STFCR/L
KAPR:91°
A184


STGCR/L
KAPR:91°
A185


STFCR/L
KAPR:91°
A205

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐		☹	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐				😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊					😊					😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
HF  For finishing	TCMT06T104-HF	6.4	3.97	1.98	2.2	0.4			○																					
	TCMT06T108-HF	6.4	3.97	1.98	2.2	0.8			○																					
	TCMT090202-HF	9.6	5.56	2.38	2.5	0.2			★													○					○		○	
	TCMT090204-HF	9.6	5.56	2.38	2.5	0.4			★																		●			
	TCMT090208-HF	9.6	5.56	2.38	2.5	0.8																				○				
	TCMT110202-HF	11	6.35	2.38	2.8	0.2								●								○								
	TCMT110204-HF	11	6.35	2.38	2.8	0.4			★	★												●				●	○			
	TCMT110208-HF	11	6.35	2.38	2.8	0.8			○	○				●								○			○				○	
	TCMT16T302-HF	16.5	9.525	3.97	4.4	0.2			○																					
	TCMT16T304-HF	16.5	9.525	3.97	4.4	0.4			●					○												●	●			
	TCMT16T308-HF	16.5	9.525	3.97	4.4	0.8			○																		○		○	
EF  For finishing	TCMT090202-EF	9.6	5.56	2.38	2.5	0.2						○		●	★					★	○									
	TCMT090204-EF	9.6	5.56	2.38	2.5	0.4						○		●	★					★	○									
	TCMT110202-EF	11	6.35	2.38	2.8	0.2						○		●	★					★	○									
	TCMT110204-EF	11	6.35	2.38	2.8	0.4						○		●	★	★				★	○									
	TCMT110208-EF	11	6.35	2.38	2.8	0.8						○		●	★					○	○									
	TCMT16T304-EF	16.5	9.525	3.97	4.4	0.4						○		●	★					★	○									
	TCMT16T308-EF	16.5	9.525	3.97	4.4	0.8						○		●	★					○	○									

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

STACR/L KAPR:90°

Page A183

STFCR/L KAPR:91°

A184

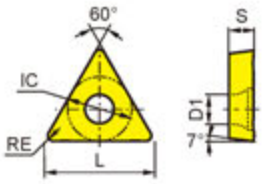
STGCR/L KAPR:91°

A185

STFCR/L KAPR:91°

A205

TC□□ (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😐	😊								😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐	😐		😊	😊	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG205H	YB9315	YB9320	YBH053	YBM153	YBM215	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
							Coated cemented carbide																				Cermet		Cemented carbide	
AHF	TCMT110204-AHF	11	6.35	2.35	2.8	0.4											★	★												
	TCMT110208-AHF	11	6.35	2.38	2.8	0.8											★	★												
	TCMT16T304-AHF	16.5	9.525	3.97	4.4	0.4											★	★												
For finishing	TCMT16T308-AHF	16.5	9.525	3.97	4.4	0.8											★	★												
EM	TCMT090204-EM	9.6	5.56	2.38	2.8	0.4								●	★	★					○	★								
	TCMT090208-EM	9.6	5.56	2.38	2.8	0.8								●	★						○	★								
	TCMT110204-EM	11	6.35	2.38	2.8	0.4								●	★	★					○	★								
	TCMT110208-EM	11	6.35	2.38	2.8	0.8								●	★						○	★								
	TCMT110212-EM	11	6.35	2.38	2.8	1.2								●	★						○	★								
For semi-finishing	TCMT16T304-EM	16.5	9.525	3.97	4.4	0.4								●	★	★					○	★								
	TCMT16T308-EM	16.5	9.525	3.97	4.4	0.8								●	★	★					○	★								
	TCMT16T312-EM	16.5	9.525	3.97	4.4	1.2								●	★						○	★								
EG	TCMT110204-EG	11	6.35	2.38	2.8	0.4											★													
	TCMT110208-EG	11	6.35	2.38	2.8	0.8											★													
For semi-finishing																														
XM	TCMT16T304-XM	16.5	9.525	3.97	4.4	0.4	★	★																						
	TCMT16T308-XM	16.5	9.525	3.97	4.4	0.8	★	★																						
	TCMT16T312-XM	16.5	9.525	3.97	4.4	1.2	★	★																						
For semi-finishing																														

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

STACR/L KAPR:90°

Page A183

STFCR/L KAPR:91°

A184

STGCR/L KAPR:91°

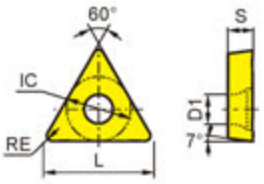
A185

STFCR/L KAPR:91°

A205

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K Cast iron																		Good	Normal	Bad				Bad
N Non-ferrous metal																							Normal	Bad
S Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
HM  For semi-finishing	TCMT090204-HM	9.6	5.56	2.38	2.5	0.4			★												○					●				
	TCMT090208-HM	9.6	5.56	2.38	2.5	0.8			○																					
	TCMT110204-HM	11	6.35	2.38	2.8	0.4			★	○				●							●				●	●	○			
	TCMT110208-HM	11	6.35	2.38	2.8	0.8			★																	●				
	TCMT16T304-HM	16.5	9.525	3.97	4.4	0.4			★	★											●				○	●				
	TCMT16T308-HM	16.5	9.525	3.97	4.4	0.8			★	★											●				●	●			○	
	TCMT16T312-HM	16.5	9.525	3.97	4.4	1.2															○									
HR  For roughing	TCMT090204-HR	9.6	5.56	2.38	2.5	0.4			○																	○				
	TCMT090208-HR	9.6	5.56	2.38	2.5	0.8																				○				●
	TCMT110204-HR	11	6.35	2.38	2.8	0.4			○																	○				
	TCMT110208-HR	11	6.35	2.38	2.8	0.8			○																	○				
	TCMT16T304-HR	16.5	9.525	3.97	4.4	0.4			○																					
	TCMT16T308-HR	16.5	9.525	3.97	4.4	0.8			●																●	●				
	TCMT16T312-HR	16.5	9.525	3.97	4.4	1.2			○																●	●				○
	TCMT220408-HR	22	12.7	4.76	5.5	0.8			○												●									

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

STACR/L KAPR:90°

Page A183

STFCR/L KAPR:91°

A184

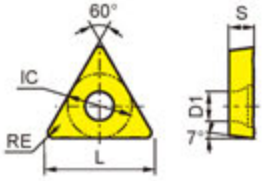
STGCR/L KAPR:91°

A185

STFCR/L KAPR:91°

A205

TC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LC  For Al machining	TCGX090202-LC	9.6	5.56	2.38	2.5	0.2																							★	
	TCGX090204-LC	9.6	5.56	2.38	2.5	0.4																							★	
	TCGX110202-LC	11	6.35	2.38	2.8	0.2																							★	
	TCGX110204-LC	11	6.35	2.38	2.8	0.4																							★	
	TCGX110208-LC	11	6.35	2.38	2.8	0.8																							★	
	TCGX16T304-LC	16.5	9.525	3.97	4.4	0.4																							★	
	TCGX16T308-LC	16.5	9.525	3.97	4.4	0.8																							★	
LH  For Al machining	TCGX090202-LH	9.6	5.56	2.38	2.5	0.2																							★	
	TCGX090204-LH	9.6	5.56	2.38	2.5	0.4																							★	
	TCGX110202-LH	11	6.35	2.38	2.8	0.2																							★	
	TCGX110204-LH	11	6.35	2.38	2.8	0.4																							★	
	TCGX110208-LH	11	6.35	2.38	2.8	0.8																							★	
	TCGX16T302-LH	16.5	9.525	3.97	4.4	0.2																							○	
	TCGX16T304-LH	16.5	9.525	3.97	4.4	0.4																							★	
	TCGX16T308-LH	16.5	9.525	3.97	4.4	0.8																							★	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

STACR/L KAPR:90°

Page A183

STFCR/L KAPR:91°

A184

STGCR/L KAPR:91°

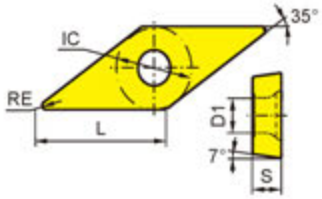
A185

STFCR/L KAPR:91°

A205

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

VC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐	😐	😐	😊									😊	😊		
M	Stainless steel						😊		😐	😐	😐	😐		😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊										😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	VCGT110302-SF	11	6.35	3.18	2.8	0.2						○															○	★		
	VCGT110304-SF	11	6.35	3.18	2.8	0.4						○															○	★		
XF  For finishing	VCMT110302-XF	11	6.35	3.18	2.8	0.2	★	★																						
	VCMT110304-XF	11	6.35	3.18	2.8	0.4	★	★																						
	VCMT110308-XF	11	6.35	3.18	2.8	0.8	★	★																						
	VCMT160404-XF	16.6	9.525	4.76	4.4	0.4	★	★																						
	VCMT160408-XF	16.6	9.525	4.76	4.4	0.8	★	★																						
NF  For finishing	VCGT160408-NF	16.5	9.525	4.76	4.4	0.8						●	★																	
NGF  For finishing	VCGT160408-NGF	16.5	9.525	4.76	4.4	0.8						○	●			○														
AHF For finishing	VCMT160404-AHF	16.6	9.525	4.76	4.4	0.4										★	★													
	VCMT160408-AHF	16.6	9.525	4.76	4.4	0.8										★	★													

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SVVCN KAPR:72°30'

Page A177

SVJCR/L KAPR:93°

A178

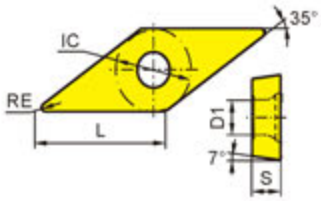
SVQCR/L KAPR:107°30'

A206

SVUCR/L KAPR:93°

A207

VC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	😊	😃	😊	😃	☹️	😊		😃	😃		☹️	😊									😊	😊		
M Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K Cast iron																		😊	😃	☹️				☹️
N Non-ferrous metal																							😃	☹️
S Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
XM  For semi-finishing	VCMT160404-XM	16.6	9.525	4.76	4.4	0.4	★	★																						
	VCMT160408-XM	16.6	9.525	4.76	4.4	0.8	★	★																						
	VCMT160412-XM	16.6	9.525	4.76	4.4	1.2	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SVVCN KAPR:72°30'

Page A177

SVJCR/L KAPR:93°

A178

SVQCR/L KAPR:107°30'

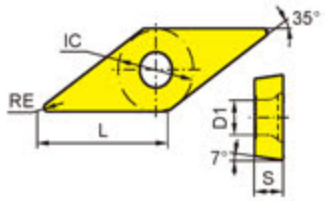
A206

SVUCR/L KAPR:93°

A207

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

VC□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹️	😊		😃	😃		☹️	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹️				☹️
N	Non-ferrous metal																							😃	☹️
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
LC  For Al machining	VCGX110301-LC	11	6.35	3.18	2.8	0.1																							★	
	VCGX110302-LC	11	6.35	3.18	2.8	0.2																							★	
	VCGX110304-LC	11	6.35	3.18	2.8	0.4																							★	
	VCGX110308-LC	11	6.35	3.18	2.8	0.8																							★	
	VCGX160404-LC	16.6	9.525	4.76	4.4	0.4																							★	
	VCGX160408-LC	16.6	9.525	4.76	4.4	0.8																							★	
	VCGX160412-LC	16.6	9.525	4.76	4.4	1.2																							★	
	VCGX220530-LC	22	12.7	5.56	5.5	3.0																							★	
LH  For Al machining	VCGX110202-LH	11	6.35	2.38	2.8	0.2																							○	
	VCGX110204-LH	11	6.35	2.38	2.8	0.4																							★	
	VCGX110301-LH	11	6.35	3.18	2.8	0.1																							★	●
	VCGX110302-LH	11	6.35	3.18	2.8	0.2																							★	●
	VCGX110304-LH	11	6.35	3.18	2.8	0.4																							★	●
	VCGX110308-LH	11	6.35	3.18	2.8	0.8																							○	
	VCGX160402-LH	16.6	9.525	4.76	4.4	0.2																							★	
	VCGX160404-LH	16.6	9.525	4.76	4.4	0.4																							★	○
	VCGX160408-LH	16.6	9.525	4.76	4.4	0.8																							★	○
	VCGX160412-LH	16.6	9.525	4.76	4.4	1.2																							★	●
	VCGX220530-LH	22	12.7	5.56	5.5	3.0																							★	●

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SVVCN KAPR:72°30'

Page A177

SVJCR/L KAPR:93°

A178

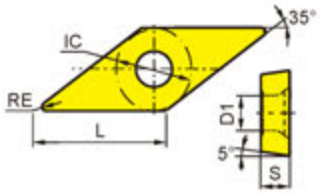
SVQCR/L KAPR:107°30'

A206

SVUCR/L KAPR:93°

A207

VB□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M	Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K	Cast iron																		Good	Normal	Bad				Bad
N	Non-ferrous metal																							Normal	Bad
S	Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	VBGT110302-SF	11	6.35	3.18	2.8	0.2						○															○	○		
	VBGT110304-SF	11	6.35	3.18	2.8	0.4						○															○	○		
EF  For finishing	VBMT110302-EF	11	6.35	3.18	2.8	0.2						○		●	★				★	○										
	VBMT110304-EF	11	6.35	3.18	2.8	0.4						○		●	★				★	○										
	VBMT110308-EF	11	6.35	3.18	2.8	0.8						○		●	★				○	○										
	VBMT160404-EF	16.5	9.525	4.76	4.4	0.4						○		●	★				★	●										
	VBMT160408-EF	16.5	9.525	4.76	4.4	0.8						○		●	★				○	●										
XF  For finishing	VBMT110202-XF	11	6.35	2.38	2.8	0.2	★	★																						
	VBMT110204-XF	11	6.35	2.38	2.8	0.4	★	★																						
	VBMT110302-XF	11	6.35	3.18	2.8	0.2	★	★																						
	VBMT110304-XF	11	6.35	3.18	2.8	0.4	★	★																						
	VBMT160404-XF	16.5	9.525	4.76	4.4	0.4	★	★																						
	VBMT160408-XF	16.5	9.525	4.76	4.4	0.8	★	★																						
HF  For finishing	VBMT110202-HF	11	6.35	2.38	2.8	0.2								●																
	VBMT110204-HF	11	6.35	2.38	2.8	0.4								○												○				
	VBMT110208-HF	11	6.35	2.38	2.8	0.8								○																

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SVJBR/L KAPR:93°

Page A174

SVABR/L KAPR:90°

A175

SVVBN KAPR:72°30'

A176

SVQBR/L KAPR:107°30'

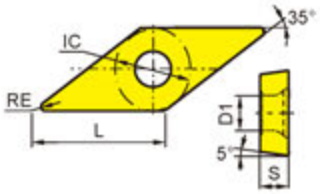
A208

SVUBR/L KAPR:93°

A209

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

VB□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		
P	Steel	😊😐😊😐☹️😊 😐😐😐😐😊 😊😊
M	Stainless steel	😊 😐😐😐😐 😊😊😐😐 😊😊
K	Cast iron	😊😐☹️ ☹️
N	Non-ferrous metal	😐☹️
S	Heat resistant alloy, Ti alloy	😊😊 😊 😊

Inserts shape	Type	Dimensions(mm)					Coated cemented carbide																			Cermet	Coated cermet	Cemented carbide	
		L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YB9315	YB9320	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
NF  For finishing	VBET160404-NF	16.5	9.525	4.76	4.4	0.4						●	★										★							
	VBET160408-NF	16.5	9.525	4.76	4.4	0.8						●	★																	
NGF  For finishing	VBET160404-NGF	16.5	9.525	4.76	4.4	0.4						○	●			○														
	VBET160408-NGF	16.5	9.525	4.76	4.4	0.8						○	●			○														
	VBET160412-NGF	16.5	9.525	4.76	4.4	1.2						○	●			○														
AHF  For finishing	VBMT160402-AHF	16.5	9.525	4.76	4.4	0.2										★	★													
	VBMT160404-AHF	16.5	9.525	4.76	4.4	0.4										★	★													
	VBMT160408-AHF	16.5	9.525	4.76	4.4	0.8										★	★													
EM  For semi-finishing	VBMT110304-EM	11	6.35	3.18	2.8	0.4								●	★					○		★								
	VBMT110308-EM	11	6.35	3.18	2.8	0.8								●	★					○		★								
XM  For semi-finishing	VBMT160404-XM	16.5	9.525	4.76	4.4	0.4	★	★																						
	VBMT160408-XM	16.5	9.525	4.76	4.4	0.8	★	★																						
	VBMT160412-XM	16.5	9.525	4.76	4.4	1.2	★	★																						

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


SVJBR/L
KAPR:93°
Page A174

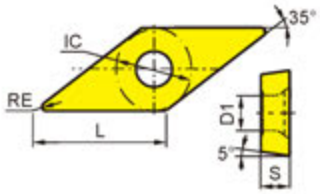

SVABR/L
KAPR:90°
A175


SVVBN
KAPR:72°30'
A176


SVQBR/L
KAPR:107°30'
A208


SVUBR/L
KAPR:93°
A209

VB□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
HM	VBMT160404-HM	16.5	9.525	4.76	4.4	0.4			★	★				●							●				●					○
	VBMT160408-HM	16.5	9.525	4.76	4.4	0.8			★	★				●							●				●	●				
	VBMT160412-HM	16.5	9.525	4.76	4.4	1.2								○							○					○				○
For semi-finishing																														
HR	VBMT160404-HR	16.5	9.525	4.76	4.4	0.4			★	○																				
	VBMT160408-HR	16.5	9.525	4.76	4.4	0.8			○	○																○				
	VBMT160412-HR	16.5	9.525	4.76	4.4	1.2			○	○																				
For roughing	VBGT160408-HR	16.5	9.525	4.76	4.4	0.8			○	○																				
SNR	VBMT160408-SNR	16.5	9.525	4.76	4.4	0.8						○	●			○							★							
	VBMT160412-SNR	16.5	9.525	4.76	4.4	1.2						○	●			○							★							
For roughing																														

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool


SVJBR/L
KAPR:93°
Page A174


SVABR/L
KAPR:90°
A175

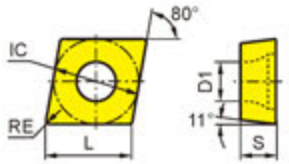

SVVBN
KAPR:72°30'
A176


SVQBR/L
KAPR:107°30'
A208


SVUBR/L
KAPR:93°
A209

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

CP□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	CPGT060202-SF	6.4	6.35	2.38	2.8	0.2						○															○			
	CPGT060204-SF	6.4	6.35	2.38	2.8	0.4						○															○			
	CPGT09T304-SF	9.7	9.525	3.97	4.4	0.4						○															○	○		

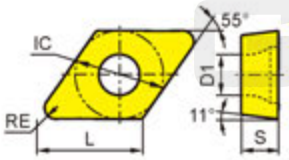
★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Applicable tool

SCLPR/L
KAPR:95°

Page A232

DP□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😃	😊	😃	☹	😊		😃	😃		☹	😊									😊	😊		
M	Stainless steel						😊		😃	😃				😊	😊	😃	😃					😊	😊		
K	Cast iron																		😊	😃	☹				☹
N	Non-ferrous metal																							😃	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	DPGT070202-SF	7.8	6.35	2.38	2.8	0.2						○															○	○		
	DPGT070204-SF	7.8	6.35	2.38	2.8	0.4						○															○			
	DPGT070208-SF	7.8	6.35	2.38	2.8	0.8						○																		
	DPGT11T304-SF	11.6	9.525	3.97	4.4	0.4						○															○			
	DPGT11T308-SF	11.6	9.525	3.97	4.4	0.8						○																		

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

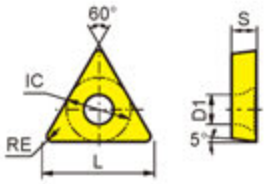
Applicable tool

SDQPR/L
KAPR:107°30'

SDUPR/L
KAPR:93°

Page A211 A212

TB□□ (Positive inserts)



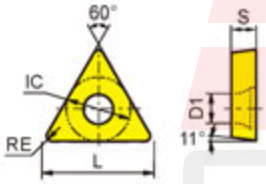
Good working condition · Normal working condition · Bad working condition

Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K Cast iron																		Good	Normal	Bad				Bad
N Non-ferrous metal																							Normal	Bad
S Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBG102	YNG151
 For extra finishing	TBGH060102L	6.4	3.97	1.59	2.2	0.2	★	★
	TBGH060104L	6.4	3.97	1.59	2.2	0.4	★	

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

TP□□ (Positive inserts)



Good working condition · Normal working condition · Bad working condition

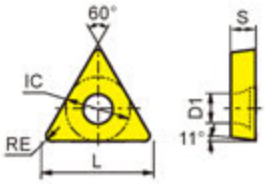
Workpiece material	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P Steel	Good	Normal	Good	Normal	Bad	Good		Normal	Normal		Bad	Good									Good	Good		
M Stainless steel						Good		Normal	Normal				Good	Good	Normal	Normal					Good	Good		
K Cast iron																		Good	Normal	Bad				Bad
N Non-ferrous metal																							Normal	Bad
S Heat resistant alloy, Ti alloy						Good	Good			Good							Good						Good	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBG102	YNG151
 For extra finishing	TPGH090202L	9.6	5.56	2.38	2.8	0.2	●	○
	TPGH090204L	9.6	5.56	2.38	2.8	0.4	●	●
	TPGH110302L	11	6.35	3.18	3.18	0.2	○	●
	TPGH110304L	11	6.35	3.18	3.18	0.4	●	●

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Insert code key A48-A49
Grade selection reference A21/A38-A45
Chipbreaker selection reference A24-A37
Recommended cutting parameters A222-A224

TP□□ (Positive inserts)

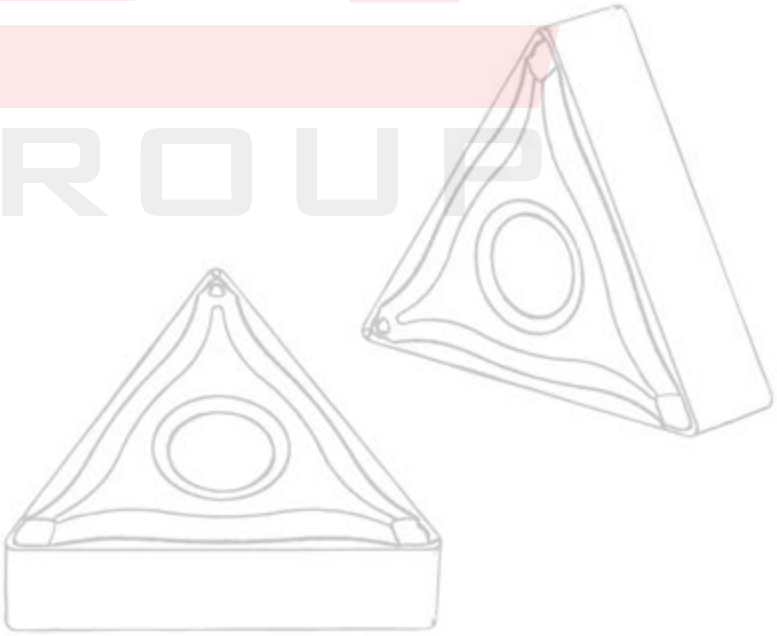


Good working condition · Normal working condition · Bad working condition

Workpiece material		YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151	YNG151C	YD101	YD201
P	Steel	😊	😐	😊	😐	☹	😊		😐	😐		☹	😊									😊	😊		
M	Stainless steel						😊		😐	😐				😊	😊	😐	😐					😊	😊		
K	Cast iron																		😊	😐	☹				☹
N	Non-ferrous metal																							😐	☹
S	Heat resistant alloy, Ti alloy						😊	😊			😊							😊						😊	

Inserts shape	Type	Dimensions(mm) L	IC	S	D1	RE	YBC103	YBC203	YBC152	YBC252	YBC352	YBG102	YBG105	YBG202	YBG205	YBG212	YBG302	YBH053	YBM153	YBM215	YBM251	YBM253	YBS103	YBD052	YBD102	YBD152	YNG151 (Cermet)	YNG151C (Coated cermet)	YD101 (Cemented carbide)	YD201 (Cemented carbide)
SF  For extra finishing	TPGT090202-SF	9.6	5.56	2.38	2.5	0.2						○																○		
	TPGT090204-SF	9.6	5.56	2.38	2.5	0.4						○															○	★		
	TPGT090208-SF	9.6	5.56	2.38	2.5	0.8						○															○			
	TPGT110302-SF	11	6.35	3.18	2.8	0.2						○															○			
	TPGT110304-SF	11	6.35	3.18	2.8	0.4						○															○	○		
	TPGT110308-SF	11	6.35	3.18	2.8	0.8						○																○		

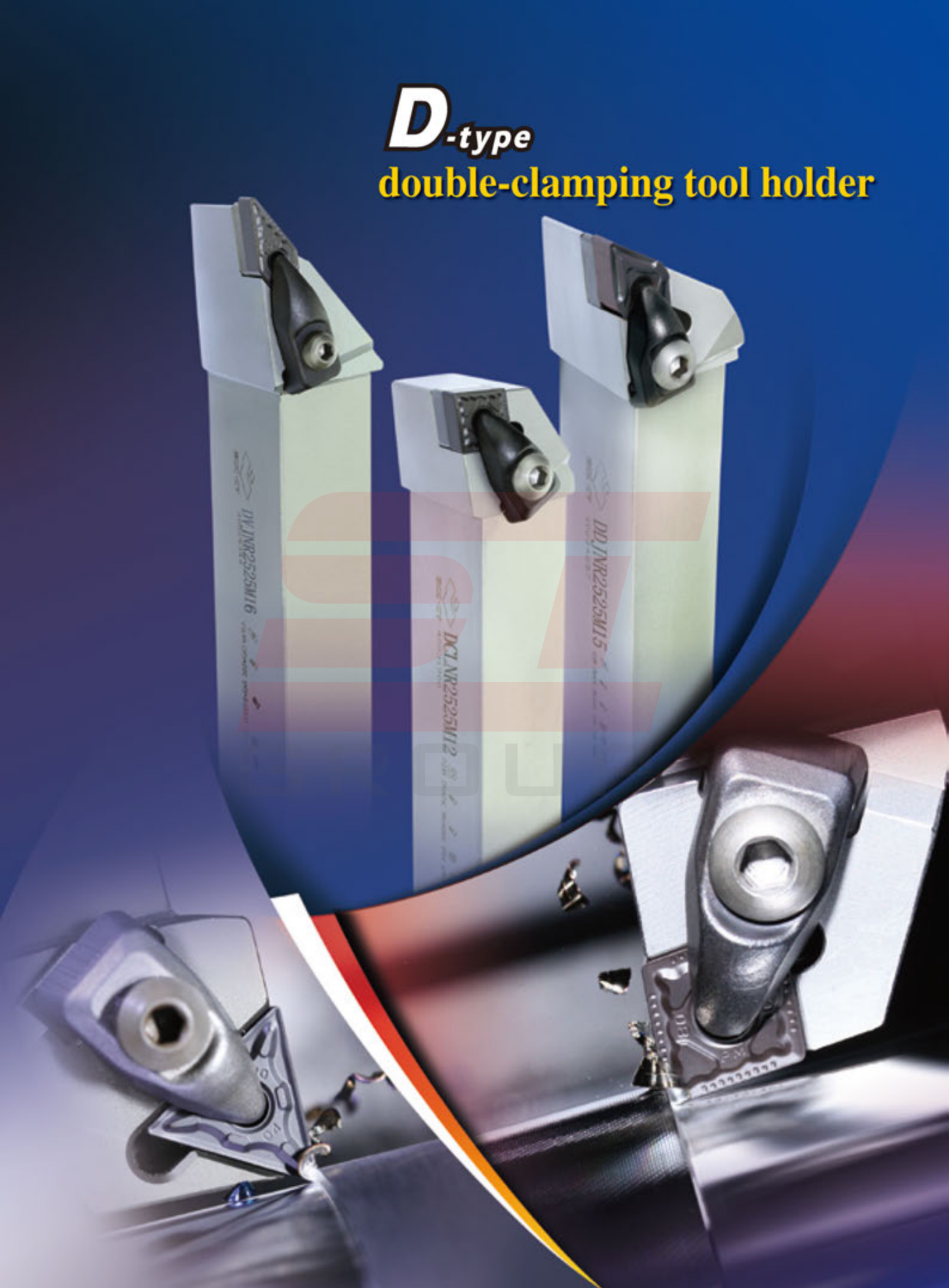
★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order



Applicable tool

Page A213

D-type
double-clamping tool holder

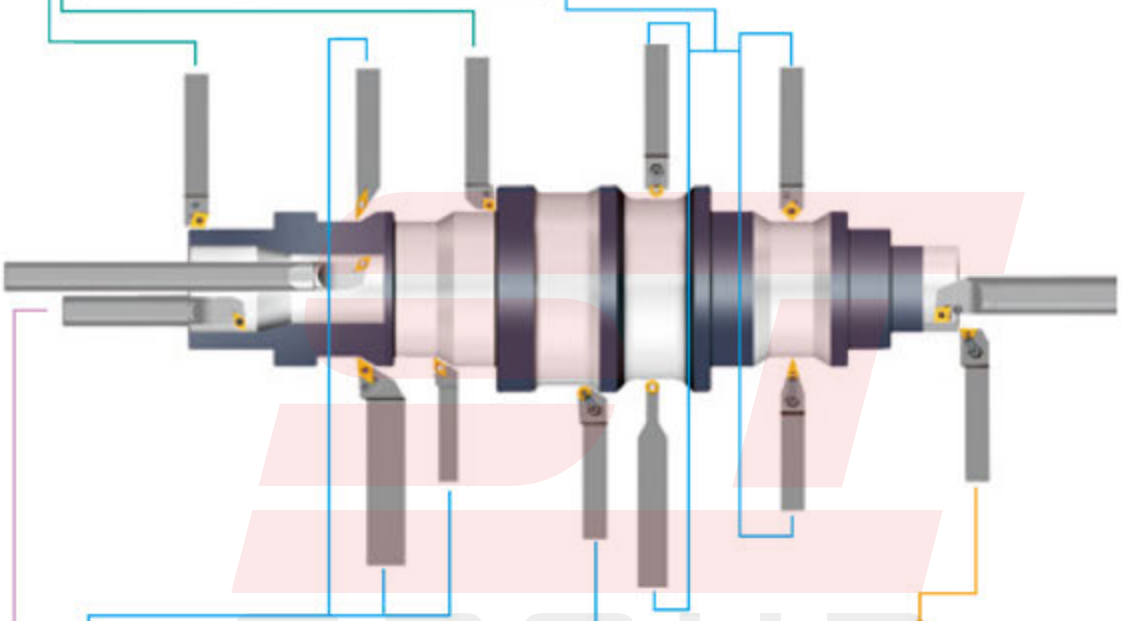


External and internal turning

External turning	Tool holder type						
	PCBNR/L□□	PSBNR/L□□	PSSNR/L□□	PTGNR/L□□	PTTNR/L□□	MCBNR/L□□	MSBNR/L□□
	MSRNR/L□□	MTGNR/L□□	MTJNR/L□□	MTJNR/L□□-Z	SCACR/L□□	SSBCR/L□□	SSSCR/L□□
	STACR/L□□	STGCR/L□□	DTJNR/L□□	DSBNR/L□□			

External and end surface turning	Tool holder type	
	PCLNR/L□□	PWLNR/L□□
	MCLNR/L□□	MWLNR/L□□
	SCLCR/L□□	DCLNR/L□□
	DWLNR/L□□	

Profile turning	Tool holder type			
	PDPNN□□	PSDNN□□	MDPNN□□	MSDNN□□
	MVVNN□□	SDNCN□□	SVVBN□□	SVVCN□□
	SSDCN□□	SRDCN□□	DVVNN□□	



Profile turning	Tool holder type		
	PDJNR/L□□	MDJNR/L□□	MVJNR/L□□
	SDACR/L□□	SDJCR/L□□	SVABR/L□□
	SVJBR/L□□	SVJCR/L□□	
	DDJNR/L□□	DVJCR/L□□	

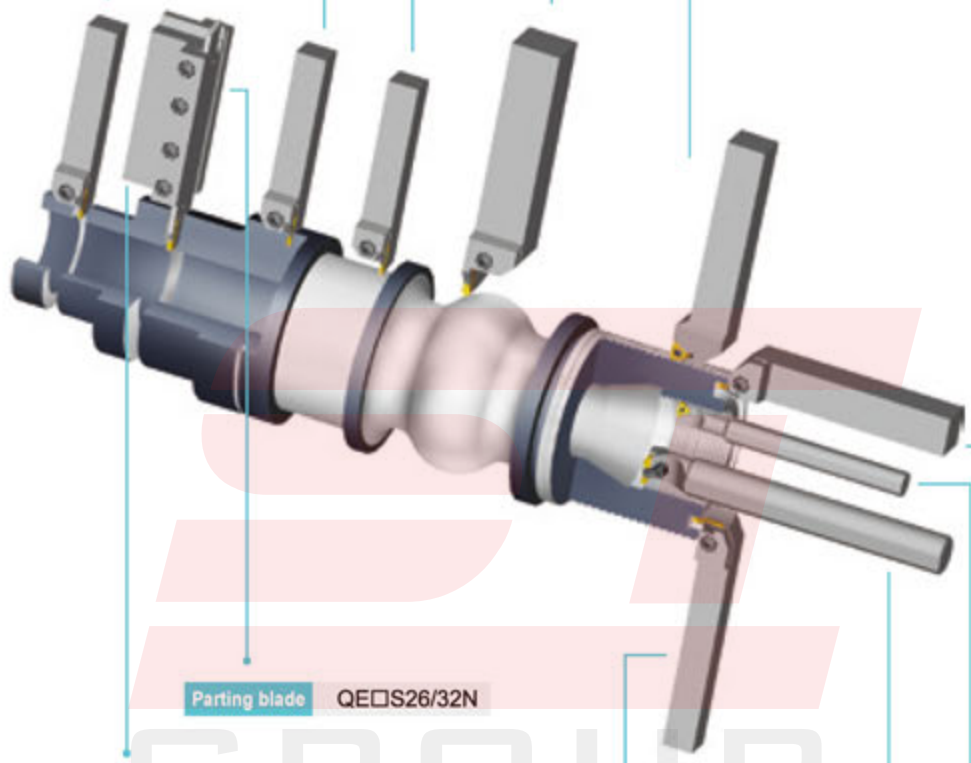
Profile turning	Tool holder type
	SRGCR/L□□

End surface turning	Tool holder type	
	PSKNR/L□□	PTFNR/L□□
	MSKNR/L□□	MTFNR/L□□
	SSKCR/L□□	STFCR/L□□

Tool holders for internal turning (Steel tool shank)						
						
	S□-PSKNR/L□	S□-PCLNR/L□	S□-PDPNR/L□	S□-PDUNR/L□	S□-SDQCR/L□	S□-SDZCR/L□
	S□-PTFNR/L□	S□-PWLNR/L□		S□-SDUCR/L□	S□-SDQPR/L□	
	S□-SCFCR□	S□-SCLCR/L□		S□-SDUNR/L□	S□-SVQBR/L□	
	S□-SSKCR/L□	S□-SCLPR/L□		S□-SDUPR/L□	S□-SVQCR/L□	
	S□-STFCR/L□			S□-SVUBR/L□		
	S□-STUPR/L□			S□-SVUCR/L□		

Tool holders for internal turning (Cemented carbide tool shank)				
				
	C□-STUPR/L□	C□-SCLPR/L□	C□-SDUPR/L□	C□-SDQPR/L□
			C□-SVUCR/L□	C□-SVQCR/L□

Parting, grooving and threading tools



External threading tools	ZSER/L□
End surface grooving, turning	QF□D□□R/L□-□H GFD□□R/L
Parting blade	QE□S26/32N
Parting blade holder	QZS□26/32
Internal threading tools	ZSIR/L□

External parting, grooving, turning and profiling	QE□D□R/L□	the Little Squirrel series
	GQCR/L□	
	QZQ□R/L□	
	QZS□R/L□	
	GED□□R/L	
Precise grooving and turning	QECD□R/L025	the Little Squirrel series
External recess and profiling	QX□D□R/L□-45	the Little Squirrel series
External grooving for hard-to-machine materials	QE□S□R/L□-□N	the Little Squirrel series

Internal grooving, turning	C□-Q□DR/L□	the Little Squirrel series
	S□□□-QC□□R/L□	
	C□-QZSR/L□	
	GID□□R/L	
End surface grooving, turning	QF□D□R/L□-□L	

How to select external turning tools

Explanation of external turning tools detailed table

- Listed according to clamping types.

Approach angle of tools

Tools type
The first 4 letters in the type description stands for tool shape and application

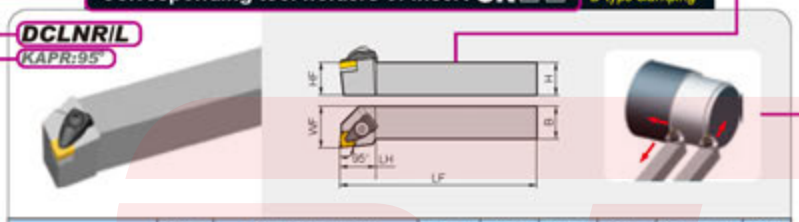
Inserts type

Specification chart

Application chart
The arrow shows suitable applications such as external turning, profiling and end turning, etc.

Corresponding tool holders of insert CN□□ D-type clamping

DCLNR/L
KAPR:95°



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Shim screw	Spring
DCLNR/L	1616H09	▲	△	16	16	100	16	21	24	CM5×22C	C09BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K09	▲	△	20	20	125	20	25	24						
	2525M09	▲	△	25	25	150	25	32	24						
	2020K12	▲	▲	20	20	125	20	25	28	CM6×25C	C12BM	WH40L	C2RA	SM6×10XA1	SPR4
	2525M12	▲	▲	25	25	150	25	32	28						
	3225P12	▲	▲	32	25	170	32	32	28						

▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type: DCLNR/L□□H/K/M09	CN□□0903□□	CN□□0903□□			
Tool holder type: DCLNR/L□□K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□

Products specification
Including product description, stock (left and right hand), basic dimensions and applicable spare parts.

Applicable inserts
Including applications of inserts, reference page, insert shape and corresponding tool holders.

TURNING A

External turning tools

External turning tools overview

Clamping system	Tool type	Approach angle(KAPR°)	Turning type: External turning	Turning type: End surface turning	Turning type: External and end surface turning	Turning type: Profile turning	Turning type: Profile turning	Turning type: Profile turning	Applicable workpiece shape: Short, Thick	Applicable workpiece shape: Thin, Long	Page
D	DCLNR/L	95			☺				☺		A136
D	DDJNR/L	93					☺		☺	☺	A137
D	DSBNR/L	75	☺						☺		A138
D	DTGNR/L	91	☺						☺	☺	A139
D	DVVNN	72.5						☺	☺		A140
D	DVJNR/L	93					☺		☺	☺	A140
D	DWLNR/L	95			☺				☺		A141
P	PCBNR/L	75	☺						☺		A142
P	PCLNR/L	95			☺				☺		A143
P	PDJNR/L	93					☺		☺	☺	A144
P	PDPNN	62.5						☺	☺		A145
P	PSBNR/L	75	☺						☺		A146
P	PSDNN	45						☺	☺		A147
P	PSKNR/L	75		☺					☺		A148
P	PSSNR/L	45	☺						☺		A149
P	PTFNR/L	91		☺					☺	☺	A150

☺ Recommended ☺ Available

External turning tools overview

Clamping system	Tool type	Approach angle(KAPR°)	Turning type: External turning	End surface turning	External and end surface turning	Profile turning	Profile turning	Profile turning	Applicable workpiece shape: Short, Thick	Thin, Long	Page
P	PTTNR/L	60	☺						☺		A151
P	PTGNR/L	90	☺						☺	☺	A152
P	PWLNR/L	95			☺				☺		A153
M	MCBNR/L	75	☺						☺		A154
M	MCLNR/L	95			☺				☺		A155
M	MDJNR/L	93					☺		☺	☺	A156
M	MDPNN	62.5						☺	☺		A157
M	MSBNR/L	75	☺						☺		A158
M	MSRNR/L	75	☺						☺		A159
M	MSKNR/L	75		☺					☺		A160
M	MSDNN	45						☺	☺		A161
M	MTGNR/L	90	☺						☺	☺	A162
M	MTJNR/L	93	☺						☺		A163
M	MTJNR/L-Z	93		☺			☺		☺		A164
M	MTFNR/L	91		☺					☺		A165

☺ Recommended ☺ Available

External turning tools overview

Clamping system	Tool type	Approach angle(KAPR°)	Turning type						Applicable workpiece shape		Page
			External turning	End surface turning	External and end surface turning	Profile turning	Profile turning	Profile turning	Short, Thick	Thin, Long	
M	MVVNN	72.5						☺	☺		A166
M	MVJNR/L	93					☺		☺	☺	A167
M	MWLNR/L	95			☺				☺		A168
S	SCACR/L	90	☺						☺	☺	A169
S	SCLCR/L	95			☺				☺	☺	A170
S	SDACR/L	90					☺		☺	☺	A171
S	SDJCR/L	93					☺		☺	☺	A172
S	SDNCN	62.5						☺	☺	☺	A173
S	SVJBR/L	93					☺		☺	☺	A174
S	SVABR/L	90					☺		☺	☺	A175
S	SVVBN	72.5						☺	☺	☺	A176
S	SVVCN	72.5						☺	☺	☺	A177
S	SVJCR/L	93					☺		☺	☺	A178
S	SSBCR/L	75	☺						☺		A179
S	SSDCN	45						☺	☺		A180

☺ Recommended ☺ Available

External turning tools overview

Clamping system	Tool type	Approach angle(KAPR°)	Turning type						Applicable workpiece shape		Page
			External turning	End surface turning	External and end surface turning	Profile turning	Profile turning	Profile turning	Short, Thick	Thin, Long	
S	SSKCR/L 	75		☺					☺		A181
	SSSCR/L 	45	☺						☺		A182
	STACR/L 	90	☺						☺	☺	A183
	STFCR/L 	91		☺					☺		A184
	STGCR/L 	91	☺						☺	☺	A185
	SRDCN 							☺	☺		A186
	SRGCR/L 					☺			☺		A187

☺ Recommended ☺ Available

External turning tools code key

Clamping system

- **P** – Hole clamping
- **M**-Top and hole clamping
- **S** – Screw on
- **C** – Top clamping
- **D** – double clamping

Insert shape

80° **C**	55° **D**
R	90° **S**
60° **T**	35° **V**
80° **W**	

Clearance angle of insert

5°	**B**
7°	**C**
15°	**D**
20°	**E**
0°	**N**
11°	**P**

Cutting direction

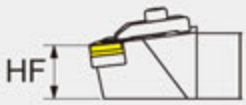
- **L** - Left-hand
- **R** - Right-hand
- **N** Right and left hand

P C L N L

Tool holder style and approach angle

A	B	C	D	E	F	G	H
90°	75°	90°	45°	60°	90°	90°	107°30′
J	**K**	**L**	**M**	**N**	**O**	**P**	**Q**
93°	75°	95° / 95°	50°	63°	117°30′	62°30′	107°30′
R	**S**	**T**	**U**	**V**	**W**	**X**	
75°	45°	60°	93°	72°30′	60°	120°	

Nose height (mm)

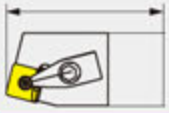


Code	Height
12	12
16	16
20	20
25	25
32	32
40	40
50	50

Width of tool holder (mm)

Code	Width
12	12
16	16
20	20
25	25
32	32
40	40
50	50

Length of tool holder (mm)

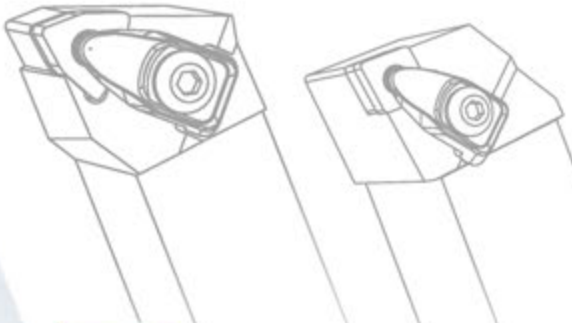


Code	Length
E	70
F	80
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

25 25 M 12

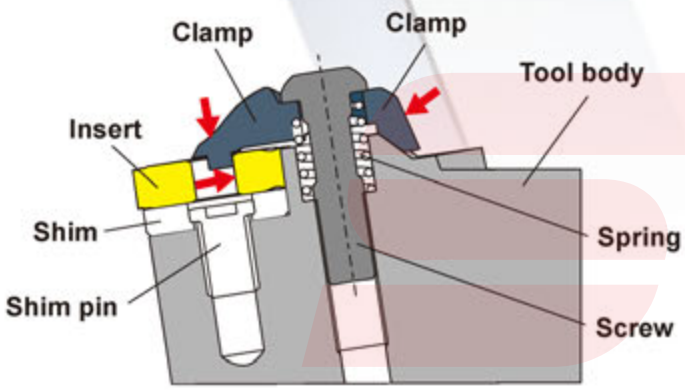
Length of cutting edge

Inserts shape	C	D	R	S	T	V	W
							
Inscribed circle (mm)	Length of cutting edge(mm)						
5.556	---	---	---	---	09	---	---
6.350	06	07	---	---	11	---	---
9.525	09	11	09	09	16	16	06
12.700	12	15	12	12	22	22	08
15.875	16	19	15	15	27	---	---
19.050	19	---	19	19	33	---	---
25.400	25	---	25	25	44	---	---
32.000	---	---	32	---	---	---	---



D-type double-clamping tool holder

With newly developed double-clamping structure, D-type turning tools have high clamping rigidity and high positioning accuracy, achieving easy and secure clamping of inserts. It is the best choice for the clamping of straight hole negative inserts.

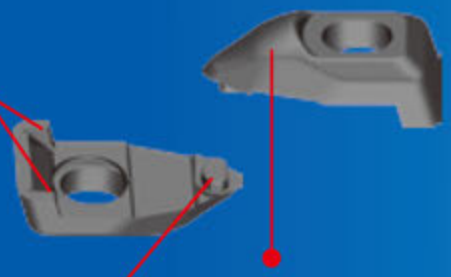


Convenient secure clamping device

Slots in the tool body match perfectly with the clamp, realizing simple and easy clamping.

Uniquely clamp

The clamp and the inner wall of insert hole make an arc contact. The stable and evenly distributed clamping force ensures more secure clamping.



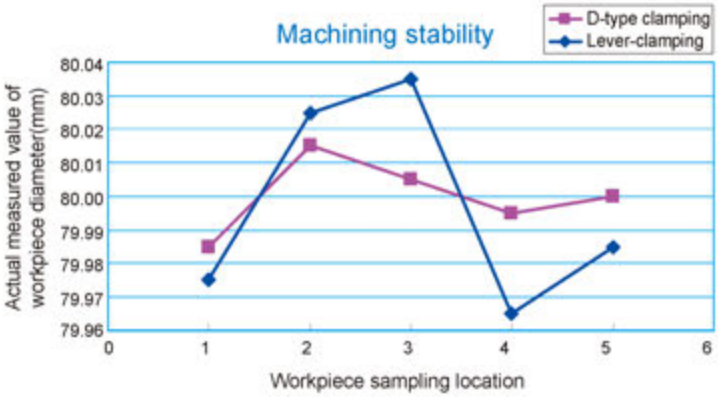
lug boss on both ends and double-locating make more insert clamp secure.

Arc locating surface makes large contact area and the force is evenly distributed.

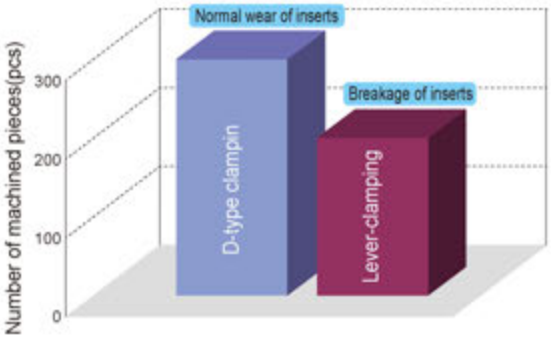
Simple and compact structure effectively prevents chip blocking while ensuring high clamping rigidity.

Compared with lever-clamping:

① Accurate locating ensures more stable machining accuracy.



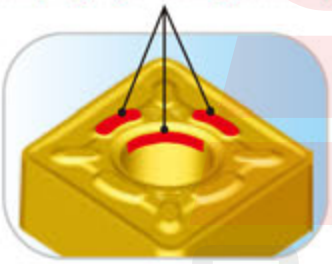
② High clamping rigidity effectively improves resistance to breakage of insert.



Compared with similar products of company A:

① Locating surface contact: (checking the contact location of clamp by dyeing)

Force evenly distributed, firm clamping, high locating accuracy.



ZCC·CT

Similar product of company A

② Effect on tool life:

Tool holder: DCLNL3225P12
Insert: YBC252/CNMG120408-DR
Cutting material: 45# steel
Cutting parameters: V_c=250m/min
a_p=2mm
f=0.6mm/r

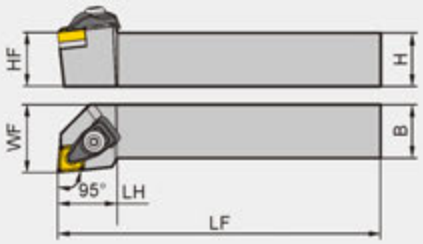
After 60 minutes of cutting

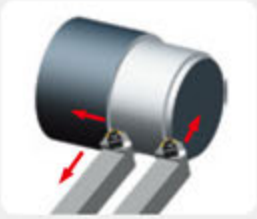
ZCC·CT

Similar product of company A

Corresponding tool holders of insert CN□□ D-type clamping

DCLNR/L
KAPR:95°





Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
		R	L	H	B	LF	HF	WF	LH						
DCLNR/L	1616H09	▲	△	16	16	100	16	21	24	CM5×22C	C09BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K09	▲	△	20	20	125	20	25	24						
	2525M09	▲	△	25	25	150	25	32	24						
	2020K12	▲	▲	20	20	125	20	25	28	CM6×25C	C12BM	WH40L	C2RA	SM6×10XA1	SPR4
	2525M12	▲	▲	25	25	150	25	32	28						
	3225P12	▲	▲	32	25	170	32	32	28						

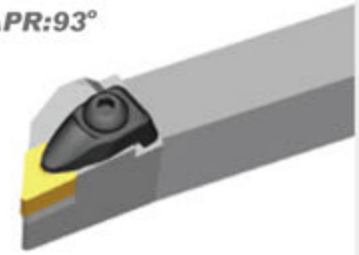
▲Stock available △Make-to-order

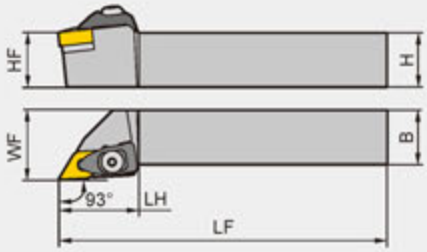
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type DCLNR/L□□H/K/M09	CN□□0903□□	CN□□0903□□			
Tool holder type DCLNR/L□□K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□

Corresponding tool holders of insert DN□□ D-type clamping

DDJNR/L
KAPR:93°





Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Shim screw	Spring
DDJNR/L	1616H11	△	△	16	16	100	16	20	30	CM5×22C	D11BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K11	▲	△	20	20	125	20	25	30						
	2525M11	▲	△	25	25	150	25	32	30						
	3225P11	△	△	32	25	170	32	32	30						
	2020K15	▲	▲	20	20	125	20	25	35	CM6×25C	D15BM	WH40L	C2RA	SM6×10XA1	SPR4
	2525M15	▲	▲	25	25	150	25	32	35						
	3232P15	▲	▲	32	32	170	32	40	35						

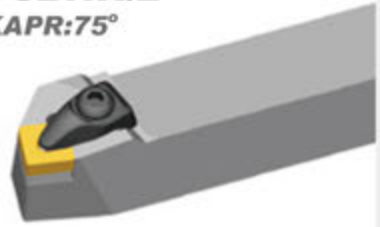
▲Stock available △Make-to-order

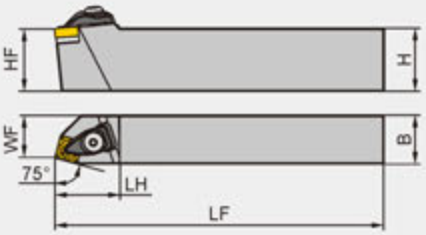
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type: DDJNR/L□□H/K/M/P11	DN□□1104□□	DN□□1104□□			DN□□1104□□
Tool holder type: DDJNR/L□□K/M/P15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□

Corresponding tool holders of insert SN□□ D-type clamping

DSBNR/L
KAPR:75°





Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
		R	L	H	B	LF	HF	WF	LH						
DSBNR/L	1616H09	▲	△	16	16	100	16	13	28	CM5×22C	S09BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K12	▲	▲	20	20	125	20	17	34	CM6×25C	S12BM	WH40L	C2RA	SM6×10XA1	SPR4
	2525M12	▲	▲	25	25	150	25	22	34						
	3225P12	▲	▲	32	25	170	32	22	34						
	3232P15	▲	▲	32	32	170	32	27	41	CM6×25C	S15BM	WH40L	C3RA	SM6×10XA2	SPR4

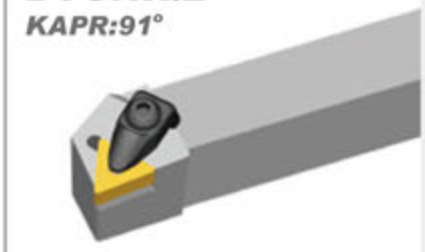
▲Stock available △Make-to-order

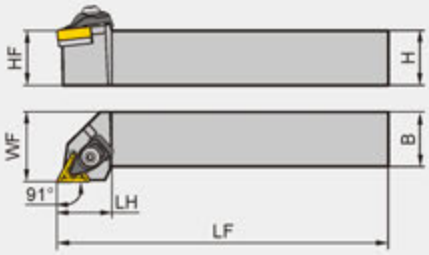
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		
Tool holder type DSBNR/L□□H09	SN□□0903□□	SN□□0903□□			SN□□0903□□
DSBNR/L□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
DSBNR/L□□P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□

Corresponding tool holders of insert TN□□ D-type clamping

DTGNR/L
KAPR:91°





Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
		R	L	H	B	LF	HF	WF	LH						
DTGNR/L	1616H16	△	△	16	16	100	16	22	25	CM5×22C	T16BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K16	▲	▲	20	20	125	20	25	25						
	2525M16	▲	▲	25	25	150	25	32	25						

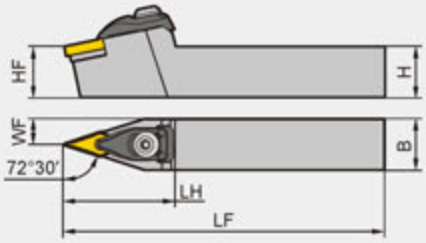
▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: DTGNR/L□□H/K/M16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□

Corresponding tool holders of insert VN□□ D-type clamping

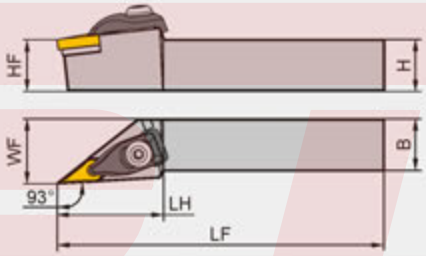
DVVNN
KAPR:72°30'



Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
			H	B	LF	HF	WF	LH						
DVVNN	2020K16	△	20	20	125	20	10	44	CM5×22C	V16BM	WH30L	C6RA	SM5×8.65XA1	SPR6
	2525M16	▲	25	25	150	25	12.5	44						

▲Stock available △Make-to-order

DVJNR/L
KAPR:93°



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
		R	L	H	B	LF	HF	WF	LH						
DVJNR/L	2020K16	▲	▲	20	20	125	20	25	41	CM5×22C	V16BM	WH30L	C6RA	SM5×8.65XA1	SPR6
	2525M16	▲	▲	25	25	150	25	32	41						

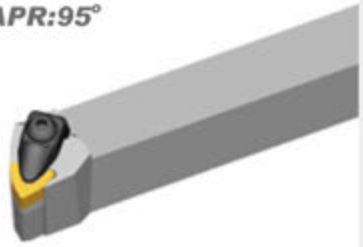
▲Stock available △Make-to-order

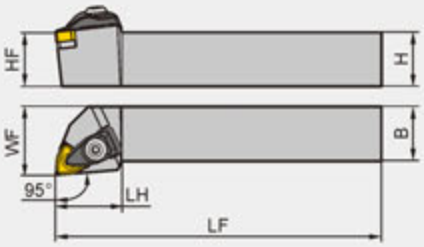
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF  A85	XM  A86	SNR  A87	TC  A87
	DF  A85	PM  A86		
	EF  A85	DM  A86		
	ADF  A85	EM  A87		
	SF  A86	EG  A87		
	NF  A85	NM  A87		
	NGF  A86			
Tool holder type	DVVNN□□K/M16	VN□□1604□□	VN□□1604□□	VN□□1604□□	VN□□1604□□
	DVJNR/L□□K/M16	VN□□1604□□	VN□□1604□□	VN□□1604□□	VN□□1604□□

Corresponding tool holders of insert WN□□ D-type clamping

DWLNR/L
KAPR:95°





Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Shim screw	Spring
		R	L	H	B	LF	HF	WF	LH						
DWLNR/L	1616H06	▲	△	16	16	100	16	25	24	CM5×22C	W06BM	WH30L	C1RA	SM5×8.65XA1	SPR6
	2020K06	▲	▲	20	20	125	20	25	24						
	2525M06	▲	▲	25	25	150	25	32	24						
	2020K08	▲	▲	20	20	125	20	25	31	CM6×25C	W08BM	WH40L	C2RA	SM6×10XA1	SPR4
	2525M08	▲	▲	25	25	150	25	32	31						
	3225P08	△	△	32	25	170	32	32	31						

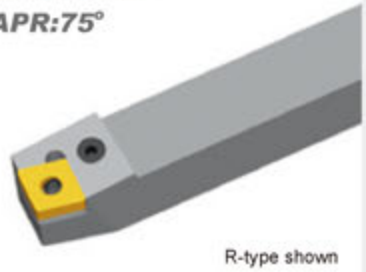
▲Stock available △Make-to-order

Applicable inserts

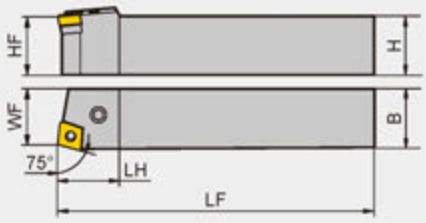
Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A88	XM A90	DR Double-side A92	TC A93
	DF A88	PM A90	SNR Double-side A92	Without chipbreaker A93
	SF A88	DM A91		
	EF A89	EM A91		
	ES A89	EG A91		
	ADF A89	EH A92		
	NF A89	NM A92		
Tool holder type: DWLNR/L□□H/K/M06	WN□□0604□□	WN□□0604□□	WN□□0604□□	WN□□0604□□
Tool holder type: DWLNR/L□□K/M/P08	WN□□0804□□	WN□□0804□□	WN□□0804□□	WN□□0804□□

Corresponding tool holders of insert CN□□ P-type clamping

PCBNR/L
KAPR:75°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PCBNR/L	2020K12	▲	▲	20	20	125	20	17	27	LEM8×21	C12AP	WH30L	L4	SP4
	2525M12	▲	▲	25	25	150	25	22	27					
	3232P12	▲	▲	32	32	170	32	27	33					
	2525M16	▲	▲	25	25	150	25	22	33	LEM8×25	C16AP	WH30L	L5	SP5
	3232P16	▲	▲	32	32	170	32	27	33					
	4040R16	▲	▲	40	40	200	40	35	38					
	3232P19	▲	▲	32	32	170	32	27	38	LEM10×27	C19AP	WH40L	L6	SP6
	4040R19	▲	▲	40	40	200	40	35	40					
	4040S2507	▲	▲	40	40	250	40	35	50	LEM12×36A	C25AP-07	WH50L	L8	SP8
	4040S2509	▲	▲	40	40	250	40	35	50		C25AP			

▲Stock available △Make-to-order

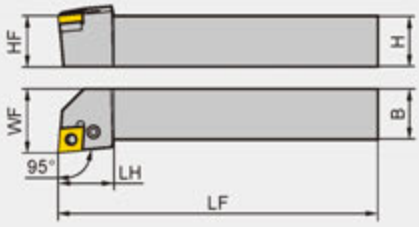
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type: PCBNR/L□□K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□
PCBNR/L□□M/P/R16	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□
PCBNR/L□□P/R19		CN□□1906□□	CN□□1906□□	CN□□1906□□	CN□□1906□□
PCBNR/L□□S2507			CN□□2507□□		
PCBNR/L□□S2509			CN□□2509□□		

Corresponding tool holders of insert CN□□ P-type clamping

PCLNR/L
KAPR:95°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PCLNR/L	2020K12	▲	▲	20	20	125	20	25	28	LEM8×21	C12AP	WH30L	L4	SP4
	2525M12	▲	▲	25	25	150	25	32	33					
	3225P12	△	△	32	25	170	32	32	33					
	3232P12	▲	▲	32	32	170	32	40	33					
	2525M16	▲	▲	25	25	150	25	32	33	LEM8×25	C16AP	WH30L	L5	SP5
	3225P16	△	△	32	25	170	32	32	33					
	3232P16	▲	▲	32	32	170	32	40	33					
	4040R16	△	△	40	40	200	40	50	38					
	3232P19	▲	▲	32	32	170	32	40	38	LEM10×27	C19AP	WH40L	L6	SP6
	4040R19	▲	▲	40	40	200	40	50	38					
	4040S2507	▲	▲	40	40	250	40	50	49	LEM12×36A	C25AP-07	WH50L	L8	SP8
	4040S2509	▲	▲	40	40	250	40	50	49		C25AP			

▲Stock available △Make-to-order

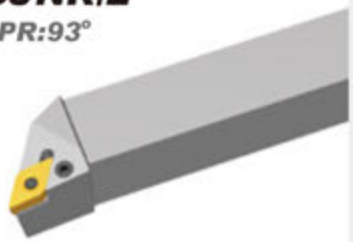
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type: PCBNR/L□□K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□
PCBNR/L□□M/P/R16	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□
PCBNR/L□□P/R19		CN□□1906□□	CN□□1906□□	CN□□1906□□	CN□□1906□□
PCBNR/L□□S2507			CN□□2507□□		
PCBNR/L□□S2509			CN□□2509□□		

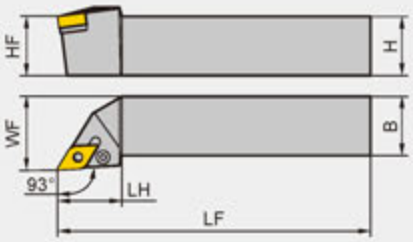
Corresponding tool holders of insert DN□□ P-type clamping

PDJNR/L

KAPR:93°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PDJNR/L	1616H11	▲	▲	16	16	100	16	20	25					
	2020K11	▲	▲	20	20	125	20	25	25	LEM6×13.4A	D11AP	WH25L	L3	SP3
	2525M11	▲	▲	25	25	150	25	32	30					
	2020K15	▲	▲	20	20	125	20	25	35					
	2525M15	▲	▲	25	25	150	25	32	35	LEM8×21	D15AP	WH30L	L4B	SP4
	3232P15	▲	▲	32	32	170	32	40	35					
	2020K15-3	▲	△	20	20	125	20	25	35					
	2525M15-3	▲	▲	25	25	150	25	32	35	LEM8×21	D15AP	WH30L	L4	SP4
	3232P15-3	▲	△	32	32	170	32	40	35					

▲Stock available △Make-to-order

Applicable inserts

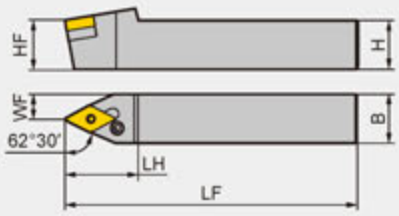
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				

Tool holder type						
	PDJNR/L□□H/K/M11	DN□□1104□□	DN□□1104□□			DN□□1104□□
	PDJNR/L□□K/M/P15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□
	PDJNR/L□□K/M/P15-3	DN□□1504□□	DN□□1504□□			DN□□1504□□

Corresponding tool holders of insert DN□□ P-type clamping

PDPNN
KAPR:62°30'

R-type shown



Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
			H	B	LF	HF	WF	LH					
PDPNN	2020K15	▲	20	20	125	20	10	38	LEM8×21	D15AP	WH30L	L4B	SP4
	2525M15	▲	25	25	150	25	12.5	38					
	3232P15	▲	32	32	170	32	16	38					
	2020K15-3	▲	20	20	125	20	10	38	LEM8×21	D15AP	WH30L	L4	SP4
	2525M15-3	▲	25	25	150	25	12.5	38					
	3232P15-3	▲	32	32	170	32	16	38					

▲Stock available △Make-to-order

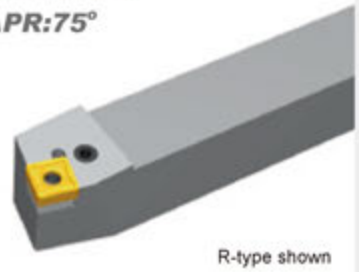
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type: PDJNR/L□□H/K/M11	DN□□1104□□	DN□□1104□□			DN□□1104□□
Tool holder type: PDJNR/L□□K/M/P15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□
Tool holder type: PDJNR/L□□K/M/P15-3	DN□□1504□□	DN□□1504□□			DN□□1504□□

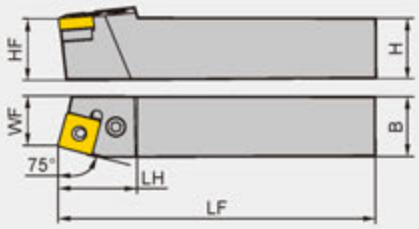
Corresponding tool holders of insert SN□□ P-type clamping

PSBNR/L

KAPR:75°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PSBNR/L	1616H09	▲	▲	16	16	100	16	13	21	LEM6×13.4A	S09AP	WH25L	L3	SP10
	2020K09	▲	▲	20	20	125	20	17	21					
	2020K12	▲	▲	20	20	125	20	17	28	LEM8×21	S12AP	WH30L	L4	SP4
	2525M12	▲	▲	25	25	150	25	22	28					
	3225P12	▲	△	32	25	170	32	22	28					
	3232P12	▲	▲	32	32	170	32	27	28					
	2525M15	▲	▲	25	25	150	25	22	35	LEM8×25	S15AP	WH30L	L5	SP5
	3232P15	▲	▲	32	32	170	32	27	35					
	3232P19	▲	▲	32	32	170	32	27	40	LEM10×27	S19AP	WH40L	L6	SP6
	4040R19	▲	▲	40	40	200	40	35	40					
	4040S2507	▲	▲	40	40	250	40	35	48	LEM12×36A	S25AP	WH50L	L8	SP8
	4040S2509	▲	▲	40	40	250	40	35	48		S25AP-09			

▲Stock available △Make-to-order

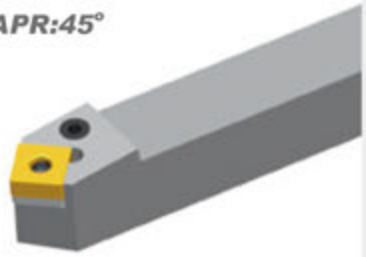
Applicable inserts

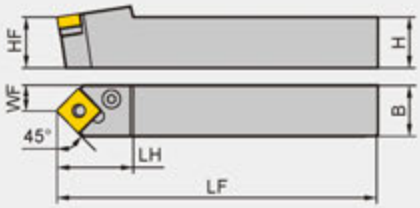
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
PSBNR/L□□H/K09	SN□□0903□□	SN□□0903□□			SN□□0903□□
PSBNR/L□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
PSBNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
PSBNR/L□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□
PSBNR/L□□S2507			SN□□2507□□	SN□□2507□□	
PSBNR/L□□S2509			SN□□2509□□	SN□□2509□□	

Corresponding tool holders of insert SN□□ P-type clamping

PSDNN
KAPR:45°





Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
			H	B	LF	HF	WF	LH					
PSDNN	2020K12	▲	20	20	125	20	10	30	LEM8×21	S12AP	WH30L	L4	SP4
	2525M12	▲	25	25	150	25	12.5	30					
	3232P12	▲	32	32	170	32	16	35					
	2525M15	▲	25	25	150	25	12.5	35	LEM8×25	S15AP	WH30L	L5	SP5
	3232P15	▲	32	32	170	32	16	40					
	3232P19	▲	32	32	170	32	16	40	LEM10×27	S19AP	WH40L	L6	SP6
	4040R19	▲	40	40	200	40	20	40					

▲Stock available △Make-to-order

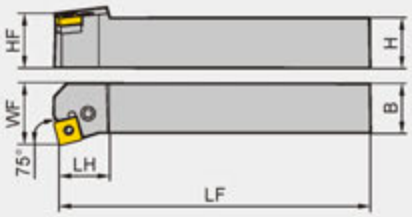
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		
Tool holder type PSDNN□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
PSDNN□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
PSDNN□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□

Corresponding tool holders of insert SN□□ P-type clamping

PSKNR/L
KAPR:75°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PSKNR/L	1616H09	▲	▲	16	16	100	16	20	17	LEM6×13.4A	S09AP	WH25L	L3	SP10
	2020K09	▲	△	20	20	125	20	25	20					
	2020K12	▲	▲	20	20	125	20	25	26	LEM8×21	S12AP	WH30L	L4	SP4
	2525M12	▲	▲	25	25	150	25	32	26					
	3232P12	▲	▲	32	32	170	32	40	30					
	2525M15	▲	▲	25	25	150	25	32	32	LEM8×25	S15AP	WH30L	L5	SP5
	3232P15	▲	▲	32	32	170	32	40	32					
	3232P19	▲	▲	32	32	170	32	40	36	LEM10×27	S19AP	WH40L	L6	SP6
	4040R19	▲	▲	40	40	200	40	50	40					

▲Stock available △Make-to-order

Applicable inserts

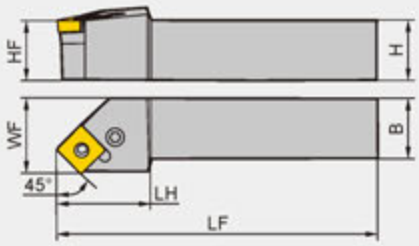
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type						
	PSKNR/L□□H/K09	SN□□0903□□	SN□□0903□□			SN□□0903□□
	PSKNR/L□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
	PSKNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
	PSKNR/L□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□

Corresponding tool holders of insert SN□□ P-type clamping

PSSNR/L
KAPR:45°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PSSNR/L	1616H09	▲	▲	16	16	100	16	20	25	LEM6×13.4A	S09AP	WH25L	L3	SP10
	2020K09	△	△	20	20	125	20	25	25					
	2020K12	▲	▲	20	20	125	20	25	30	LEM8×21	S12AP	WH30L	L4	SP4
	2525M12	▲	▲	25	25	150	25	32	30					
	3232P12	▲	▲	32	32	170	32	40	40					
	2525M15	▲	▲	25	25	150	25	32	35	LEM8×25	S15AP	WH30L	L5	SP5
	3232P15	▲	▲	32	32	170	32	40	40					
	3232P19	▲	▲	32	32	170	32	40	40	LEM10×27	S19AP	WH40L	L6	SP6
	4040R19	▲	▲	40	40	200	40	50	50					
	4040S2507	▲	▲	40	40	250	40	50	50	LEM12×36A	S25AP	WH50L	L8	SP8
	4040S2509	▲	▲	40	40	250	40	50	50		S25AP-09			

▲Stock available △Make-to-order

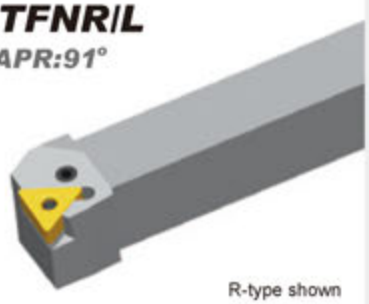
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
PSSNR/L□□H/K09	SN□□0903□□	SN□□0903□□	SN□□0903□□		SN□□0903□□
PSSNR/L□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
PSSNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
PSSNR/L□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□
PSSNR/L□□S2507			SN□□2507□□	SN□□2507□□	
PSSNR/L□□S2509			SN□□2509□□	SN□□2509□□	

Corresponding tool holders of insert TN□□ P-type clamping

PTFNR/L
KAPR:91°



R-type shown

Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PTFNR/L	1616H16	△	▲	16	16	100	16	20	20	LEM6×13.4A	T16AP	WH25L	L3	SP3
	2020K16	▲	▲	20	20	125	20	25	20					
	2525M16	▲	▲	25	25	150	25	32	22					
	2525M22	▲	▲	25	25	150	25	32	25	LEM8×21	T22AP	WH30L	L4	SP4
	3232P22	▲	▲	32	32	170	32	40	30					
	3232P27	▲	▲	32	32	170	32	40	34	LEM8×25	T27AP	WH30L	L5	SP5
	4040S27	▲	▲	40	40	250	40	50	34					

▲Stock available △Make-to-order

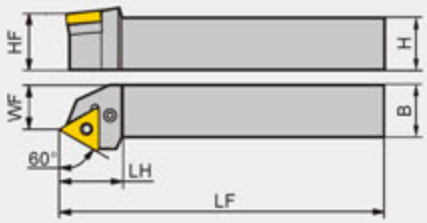
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: PTFNR/L□□H/K/M16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
PTFNR/L□□M/P22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□
PTFNR/L□□P/S27			TN□□2706□□	TN□□2706□□	TN□□2706□□

Corresponding tool holders of insert TN□□ P-type clamping

PTTNR/L
KAPR:60°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PTTNR/L	**1616H16**	▲	▲	16	16	100	16	13	25	LEM6×17	T16AP	WH25L	L3	SP3
	2020K16	▲	▲	20	20	125	20	17	25					
	2525M16	△	△	25	25	150	25	22	25					
	2525M22	▲	▲	25	25	150	25	22	32	LEM8×21	T22AP	WH30L	L4	SP4

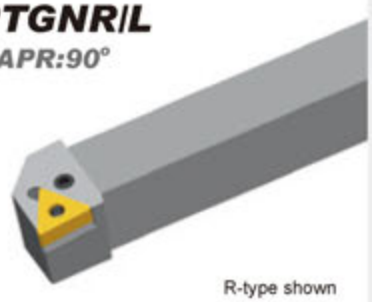
▲Stock available △Make-to-order

Applicable inserts

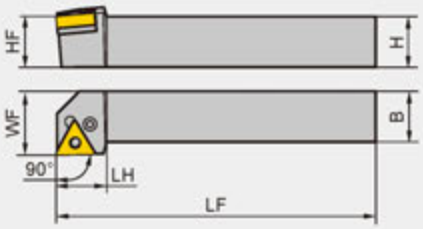
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	**XF**  A78	**XM**  A80	**DR** Double-side  A82	**HDR**  A84	**TC**  A84
	DF  A78	**PM**  A80	**DR** Single-side  A83		Without chipbreaker  A84
	SF  A78	**DM**  A81	**ER** Double-side  A83		
	EF  A79	**EM**  A81	**SNR** Double-side  A83		
	ES  A79	**EG**  A81	**LR** Single-side  A83		
	ADF  A79	**EH**  A82			
Tool holder type: **PTTNR/L□□H/K/M16**	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
Tool holder type: **PTTNR/L□□M22**	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□

Corresponding tool holders of insert TN□□ P-type clamping

PTGNR/L
KAPR:90°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PTGNR/L	1616H16	▲	▲	16	16	100	16	20	20	LEM6×13.4A	T16AP	WH25L	L3	SP3
	2020K16	▲	▲	20	20	125	20	25	20					
	2525M16	▲	▲	25	25	150	25	32	20					
	3232P16	▲	▲	32	32	170	32	40	20					
	2525M22	▲	▲	25	25	150	25	32	30	LEM8×21	T22AP	WH30L	L4	SP4
	3232P22	▲	▲	32	32	170	32	40	30					
	3232P27	▲	▲	32	32	170	32	40	33	LEM8×25	T27AP	WH30L	L5	SP5
	4040S27	▲	▲	40	40	250	40	50	33					

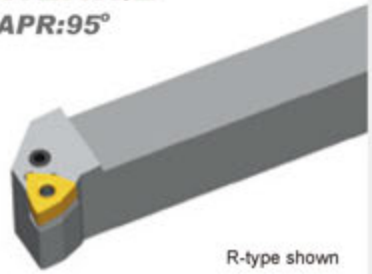
▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: PTGNR/L□□H/K/M/P16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
PTGNR/L□□M/P22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□
PTGNR/L□□P/S27			TN□□2706□□	TN□□2706□□	TN□□2706□□

Corresponding tool holders of insert WN□□ P-type clamping

PWLNR/L
KAPR:95°



R-type shown

Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Lever	Shim pin
		R	L	H	B	LF	HF	WF	LH					
PWLNR/L	1616H06	▲	▲	16	16	100	16	20	20	LEM6×13.4A	W06AP	WH25L	L3	SP3
	2020K06	▲	▲	20	20	125	20	25	20					
	2525M06	▲	▲	25	25	150	25	32	25					
	2020K08	▲	▲	20	20	125	20	25	28	LEM8×21	W08AP	WH30L	L4	SP4
	2525M08	▲	▲	25	25	150	25	32	28					
	3232P08	△	△	32	32	170	32	40	28					

▲Stock available △Make-to-order

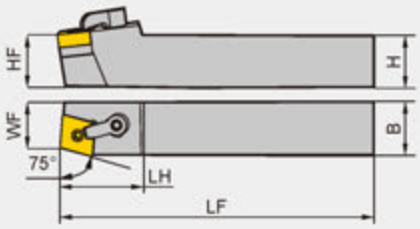
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A88	XM A90	DR Double-side A92	TC A93
	DF A88	PM A90	SNR Double-side A92	Without chipbreaker A93
	SF A88	DM A91		
	EF A89	EM A91		
	ES A89	EG A91		
	ADF A89	EH A92		
	NF A89	NM A92		
Tool holder type: PWLNR/L□□H/K/M06	WN□□0604□□	WN□□0604□□	WN□□0604□□	WN□□0604□□
Tool holder type: PWLNR/L□□K/M/P08	WN□□0804□□	WN□□0804□□	WN□□0804□□	WN□□0804□□

Corresponding tool holders of insert CN□□ M-type clamping

MCBNR/L
KAPR:75°

R-type shown



Type		Stock R	Stock L	Basic dimensions(mm) H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MCBNR/L	1616H12	△	△	16	16	100	16	13	32	DM6×25	C12BM	WH30L	C1RD	TM6×17
	2020K12	▲	▲	20	20	125	20	17	32					
	2525M12	▲	▲	25	25	150	25	22	32	DM6×30				
	3232P12	▲	▲	32	32	170	32	27	32	DM6×30				
	2525M16	▲	▲	25	25	150	25	22	40		C16BM	WH30L	C2RD	TM8×21
	3232P16	▲	▲	32	32	170	32	27	40	DM6×30				
	4040R16	△	△	40	40	200	40	35	40					
	3232P19	▲	▲	32	32	170	32	27	40	DM8×30X	C19BM	WH40L	C5RD	TM10×21
	4040R19	▲	▲	40	40	200	40	35	40					

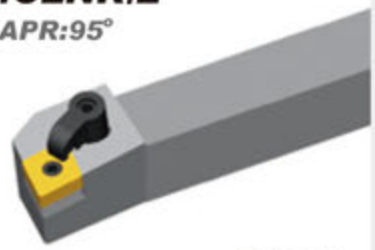
▲Stock available △Make-to-order

Applicable inserts

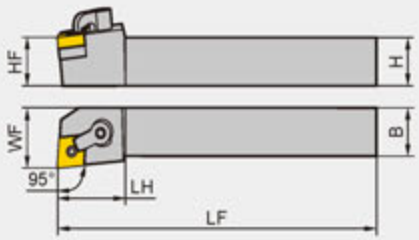
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type MCBNR/L□□H/K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□
MCBNR/L□□M/P/R16	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□
MCBNR/L□□P/R19		CN□□1906□□	CN□□1906□□	CN□□1906□□	CN□□1906□□

Corresponding tool holders of insert CN□□ M-type clamping

MCLNR/L
KAPR:95°



R-type shown



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MCLNR/L	1616H12	△	△	16	16	100	16	20	32	DM6×25	C12BM	WH30L	C1RD	TM6×17
	2020K12	▲	▲	20	20	125	20	25	32					
	2525M12	▲	▲	25	25	150	25	32	32	DM6×30				
	3225M12	△	△	32	25	150	32	32	32	DM6×30				
	3232P12	▲	▲	32	32	170	32	40	32					
	2525M16	▲	▲	25	25	150	25	32	38	DM6×30	C16BM	WH30L	C2RD	TM8×21
	3225M16	△	△	32	25	150	32	32	38	DM6×30				
	3232P16	▲	▲	32	32	170	32	40	38					
	4040R16	△	△	40	40	200	40	50	45					
	3232P19	▲	▲	32	32	170	32	40	45	DM8×30X	C19BM	WH40L	C5RD	TM10×21
	4040R19	▲	▲	40	40	200	40	50	45					

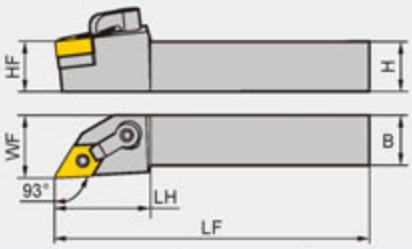
▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			
Tool holder type MCBNR/L□□H/K/M/P12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□
MCBNR/L□□M/P/R16	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□
MCBNR/L□□P/R19		CN□□1906□□	CN□□1906□□	CN□□1906□□	CN□□1906□□

Corresponding tool holders of insert DN□□ M-type clamping

MDJNR/L
KAPR:93°



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MDJNR/L	1616H11	△	△	16	16	100	16	20	32	DM6×25	D11BM	WH20L WH30L	C1RD	TM5×13
	2020K11	▲	▲	20	20	125	20	25	32					
	2525M11	▲	▲	25	25	150	25	32	32	DM6×30				
	3232P11	▲	▲	32	32	170	32	40	32	DM6×30				
	2020K15	▲	▲	20	20	125	20	25	38	DM6×25	D15BM	WH30L	C2RD	TM6×19
	2525M15	▲	▲	25	25	150	25	32	38	DM6×30				
	3225P15	▲	▲	32	25	170	32	32	38					
	3232P15	△	△	32	32	170	32	40	42	DM6×30				
	4040R15	△	△	40	40	200	40	50	45					
	2020K15-3	△	△	20	20	125	20	25	38	DM6×25				TM6×17
	2525M15-3	△	△	25	25	150	25	32	38	DM6×30				
	3225P15-3	△	△	32	25	170	32	32	38					
	3232P15-3	△	△	32	32	170	32	40	42	DM6×30				

▲Stock available △Make-to-order

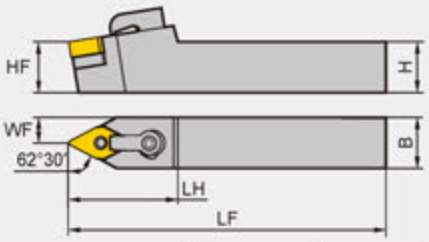
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				

Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
MDJNR/L□□H/K/M/P11	DN□□1104□□	DN□□1104□□			DN□□1104□□
MDJNR/L□□K/M/P/R15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□
MDJNR/L□□K/M/P15-3	DN□□1504□□	DN□□1504□□	DN□□1504□□		DN□□1504□□

Corresponding tool holders of insert DN□□ M-type clamping

MDPNN
KAPR:62°30'



Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Pin
			H	B	LF	HF	WF	LH					
MDPNN	1616H11	△	16	16	100	16	8	35	DM6×25	D11BM	WH20L WH30L	C1RD	TM5×13
	2020K11	▲	20	20	125	20	10	35					
	2525M11	▲	25	25	150	25	12.5	35	DM6×30				
	3232P11	▲	32	32	170	32	16	35	DM6×30				
	2020K15	▲	20	20	125	20	10	43	DM6×25	D15BM	WH30L	C2RD	TM6×19
	2525M15	▲	25	25	150	25	12.5	43	DM6×30				
	3225P15	▲	32	25	170	32	12.5	43	DM6×30				
	3232P15	△	32	32	170	32	16	43					
	4040R15	△	40	40	200	40	20	43					
	2020K15-3	△	20	20	125	20	10	43	DM6×25				TM6×17
	2525M15-3	△	25	25	150	25	12.5	43	DM6×30				
	3232R15-3	△	32	32	200	32	16	43	DM6×30				

▲Stock available △Make-to-order

Applicable inserts

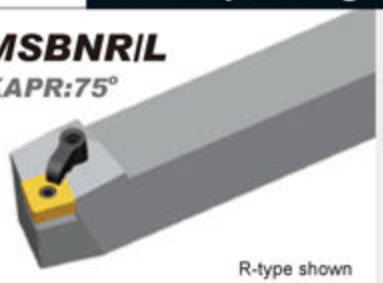
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				

Tool holder type						
	MDPNN□□H/K/M/P11	DN□□1104□□	DN□□1104□□			DN□□1104□□
	MDPNN□□K/M/P/R15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□
	MDPNN□□K/M/P15-3	DN□□1504□□	DN□□1504□□	DN□□1504□□		DN□□1504□□

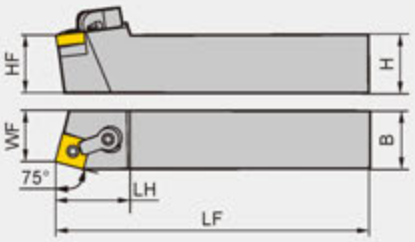
Corresponding tool holders of insert SN□□ M-type clamping

MSBNR/L

KAPR:75°



R-type shown



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MSBNR/L	1616H12	△	△	16	16	100	16	13	32	DM6×25	S12BM	WH30L	C1RD	TM6×17
	2020K12	▲	▲	20	20	125	20	17	32					
	2525M12	▲	▲	25	25	150	25	22	32	DM6×30				
	3225P12	▲	▲	32	25	170	32	22	32					
	3232P12	△	△	32	32	170	32	27	32	DM6×30				
	2525M15	▲	▲	25	25	150	25	22	38	DM6×30	S15BM	WH30L	C2RD	TM8×21
	3225P15	△	△	32	25	170	32	22	38					
	3232P15	▲	▲	32	32	170	32	29	38	DM6×30				
	3232P19	▲	▲	32	32	170	32	27	45	DM8×30X	S19BM	WH40L	C5RD	TM10×21
	4040R19	▲	▲	40	40	200	40	35	45					
	4040R2509	▲	▲	40	40	200	40	35	60	DM10×35X	S25BM	WH40L WH50L	C6RD	TM12×29
	4040S2509	▲	▲	40	40	250	40	35	60			WH40L WH50L		

▲Stock available △Make-to-order

Applicable inserts

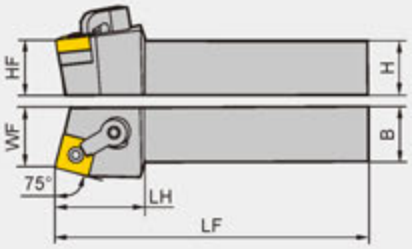
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
MSBNR/L□□H/K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
MSBNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
MSBNR/L□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□
MSBNR/L□□R/S2509			SN□□2509□□	SN□□2509□□	

Corresponding tool holders of insert SN□□ M-type clamping

MSRNR/L
KAPR:75°

R-type shown



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MSRNR/L	1616H12	△	△	16	16	100	16	17	36	DM6×25	S12BM	WH30L	C1RD	TM6×17
	2020K12	▲	△	20	20	125	20	22	36					
	2525M12	▲	▲	25	25	150	25	27	36	DM6×30				
	3225P12	▲	▲	32	25	170	32	27	36	DM6×30				
	3232P12	△	△	32	32	170	32	35	36					
	2525M15	▲	▲	25	25	150	25	27	40	DM6×30	S15BM	WH30L	C2RD	TM8×21
	3225P15	△	△	32	25	170	32	27	40	DM6×30				
	3232P15	▲	▲	32	32	170	32	35	40					
	3232P19	▲	▲	32	32	170	32	35	45	DM8×30X	S19BM	WH40L	C5RD	TM10×21
	4040R2509	▲	▲	40	40	200	40	43	60	DM10×35X	S25BM	WH40L WH50L	C6RD	TM12×29
	4040S2509	▲	▲	40	40	250	40	43	60					

▲Stock available △Make-to-order

Applicable inserts

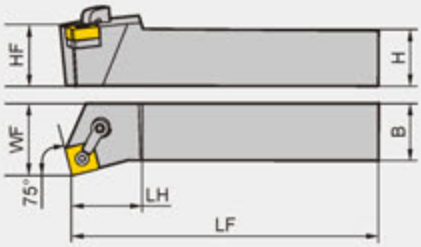
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		
Tool holder type: MSRNR/L□□H/K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
MSRNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
MSRNR/L□□P19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□
MSRNR/L□□R/S2509			SN□□2509□□	SN□□2509□□	

Corresponding tool holders of insert SN□□ M-type clamping

MSKNR/L

KAPR:75°

R-type shown



Type		Stock R	Stock L	Basic dimensions(mm) H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MSKNR/L	1616H12	△	△	16	16	100	16	20	32	DM6×20	S12BM	WH30L	C1RD	TM6×17
	2020K12	▲	△	20	20	125	20	25	32	DM6×25				
	2525M12	▲	▲	25	25	150	25	32	32	DM6×30				
	3225P12	▲	▲	32	25	170	32	32	32	DM6×30				
	3232P12	△	△	32	32	170	32	40	32					
	2525M15	▲	▲	25	25	150	25	32	35	DM6×30	S15BM	WH30L	C2RD	TM8×21
	3225P15	△	△	32	25	170	32	32	35	DM6×30				
	3232P15	▲	▲	32	32	170	32	40	38					
	3232P19	▲	▲	32	32	170	32	40	45	DM8×30X	S19BM	WH40L	C5RD	TM10×21
	4040R19	△	△	40	40	200	40	50	45					
	4040S2509	△	△	40	40	250	40	50	50	DM10×35X	S25BM	WH40L WH50L	C6RD	TM12×29

▲Stock available △Make-to-order

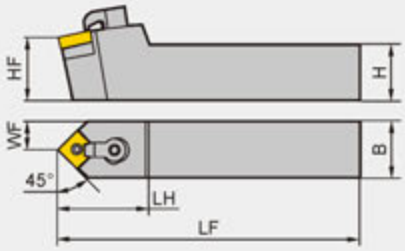
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
MSKNR/L□□H/K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
MSKNR/L□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□
MSKNR/L□□P/R19		SN□□1906□□	SN□□1906□□	SN□□1906□□	SN□□1906□□
MSKNR/L□□S2509			SN□□2509□□	SN□□2509□□	

Corresponding tool holders of insert SN□□ M-type clamping

MSDNN
KAPR:45°



Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Pin
			H	B	LF	HF	WF	LH					
MSDNN	2020K12	▲	20	20	125	20	10	35	DM6×25	S12BM	WH30L	C1RD	TM6×17
	2525M12	▲	25	25	150	25	12.5	35	DM6×30				
	3232P12	▲	32	32	170	32	16	35					
	2525M15	▲	25	25	150	25	12.5	42	DM6×30	S15BM	WH30L	C2RD	TM8×21
	3225P15	△	32	25	170	32	12.5	42					
	3232P15	▲	32	32	170	32	16	42					

▲Stock available △Make-to-order

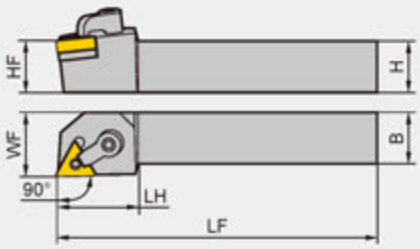
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		
Tool holder type: MSDNN□□K/M/P12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□
Tool holder type: MSDNN□□M/P15	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□	SN□□1506□□

Corresponding tool holders of insert TN□□ M-type clamping

MTGNR/L
KAPR:90°

R-type shown



Type		Stock R	Stock L	Basic dimensions(mm) H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MTGNR/L	1616H16	△	△	16	16	100	16	20	33	DM6×25	T16BM	WH20L WH30L	C1RD	TM5×13
	2020K16	▲	▲	20	20	125	20	25	33	DM6×25				
	2525M16	▲	▲	25	25	150	25	32	33	DM6×30				
	3225P16	▲	▲	32	25	170	32	32	33	DM6×30				
	3232P16	△	△	32	32	170	32	40	33					
	2525M22	▲	▲	25	25	150	25	32	35	DM6×30	T22BM	WH30L	C2RD	TM6×17
	3225P22	▲	▲	32	25	170	32	32	35	DM6×30				
	3232P22	△	△	32	32	170	32	40	40					

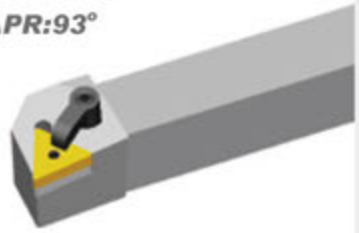
▲Stock available △Make-to-order

Applicable inserts

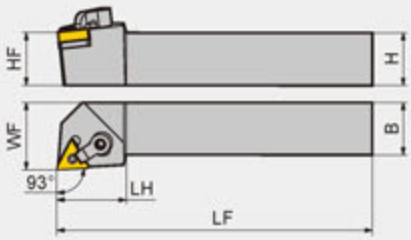
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: MTGNR/L□□ H/K/M/P16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
Tool holder type: MTGNR/L□□M/P22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□

Corresponding tool holders of insert TN□□ M-type clamping

MTJNR/L
KAPR:93°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Pin
		R	L	H	B	LF	HF	WF	LH					
MTJNR/L	2020K16	▲	▲	20	20	125	20	25	33	DM6×25	T16BM	WH20L WH30L	C1RD	TM5×13
	2525M16	▲	▲	25	25	150	25	32	33	DM6×30				
	3225P16	▲	▲	32	25	170	32	32	33					
	2525M22	▲	▲	25	25	150	25	32	35	DM6×30	T22BM	WH30L	C2RD	TM6×17
	3225P22	▲	▲	32	25	170	32	32	35					

▲Stock available △Make-to-order

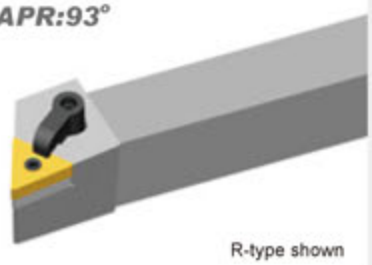
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF  A78	XM  A80	DR Double-side  A82	HDR  A84	TC  A84
	DF  A78	PM  A80	DR Single-side  A83		Without chipbreaker  A84
	SF  A78	DM  A81	ER Double-side  A83		
	EF  A79	EM  A81	SNR Double-side  A83		
	ES  A79	EG  A81	LR Single-side  A83		
	ADF  A79	EH  A82			
Tool holder type: MTJNR/L□□ K/M/P16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
Tool holder type: MTJNR/L□□M/P22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□

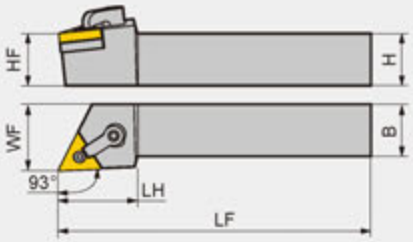
Corresponding tool holders of insert TN□□ M-type clamping

MTJNR/L-Z

KAPR:93°



R-type shown



Type		Stock R	Stock L	H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MTJNR/L-Z	1616H16	△	△	16	16	100	16	20	32	DM6×25	T16BM	WH20L WH30L	C1RD	TM5×13
	2020K16	▲	▲	20	20	125	20	25	32	DM6×25				
	2525M16	▲	▲	25	25	150	25	32	32	DM6×30				
	3225P16	▲	▲	32	25	170	32	32	32	DM6×30				
	3232P16	△	△	32	32	170	32	40	32					
	2525M22	▲	▲	25	25	150	25	32	35	DM6×30	T22BM	WH30L	C2RD	TM6×17
	3225P22	▲	▲	32	25	170	32	32	35	DM6×30				
	3232P22	△	△	32	32	170	32	40	40					
	4040R22	△	△	40	40	200	40	50	40					

▲Stock available △Make-to-order

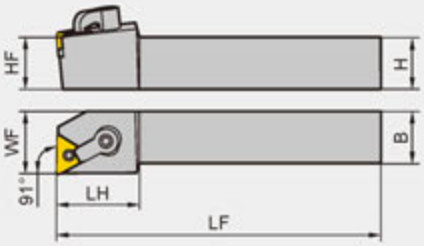
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: MTJNR/L-Z□□ H/K/M/P16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
Tool holder type: MTJNR/L-Z□□M/P/R22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□

Corresponding tool holders of insert TN□□ M-type clamping

MTFNR/L
KAPR:91°

R-type shown



Type		Stock R	Stock L	Basic dimensions(mm) H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MTFNR/L	1616H16	△	△	16	16	100	16	20	32	DM6×25	T16BM	WH20L WH30L	C1RD	TM5×13
	2020K16	▲	△	20	20	125	20	25	32	DM6×25				
	2525M16	▲	▲	25	25	150	25	32	32	DM6×30				
	3225P16	▲	△	32	25	170	32	32	32	DM6×30				
	3232P16	△	△	32	32	170	32	40	32					
	2525M22	▲	▲	25	25	150	25	32	36	DM6×30	T22BM	WH30L	C2RD	TM6×17
	3225P22	▲	△	32	25	170	32	32	36	DM6×30				
	3232P22	△	△	32	32	170	32	40	36					

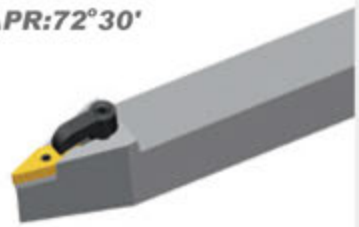
▲Stock available △Make-to-order

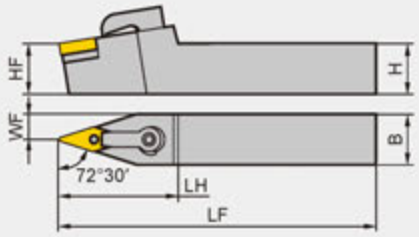
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A83		
	ADF A79	EH A82			
Tool holder type: MTFNR/L□□ H/K/M/P16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□
Tool holder type: MTFNR/L□□M/P22	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□	TN□□2204□□

Corresponding tool holders of insert VN□□ M-type clamping

MVVNN
KAPR:72°30'





Type		Stock	Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Pin
			H	B	LF	HF	WF	LH					
MVVNN	1616H16	△	16	16	100	16	8	45	DM6×25	V16BM	WH20L WH30L	C3RD	TM5×13
	2020K16	▲	20	20	125	20	10	45	DM6×25				
	2525M16	▲	25	25	150	25	12.5	45	DM6×30				
	3225P16	▲	32	25	170	32	12.5	45	DM6×30				
	3232P16	▲	32	32	170	32	16	45					

▲Stock available △Make-to-order

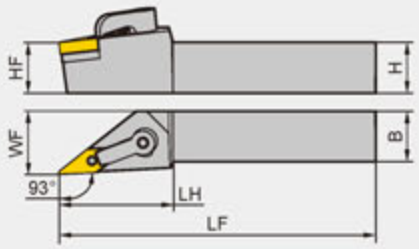
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A85	XM A86	SNR A87	TC A87
	DF A85	PM A86		
	EF A85	DM A86		
	ADF A85	EM A87		
	SF A86	EG A87		
	NF A85	NM A87		
	NGF A86			
Tool holder type: MVVNN□□ H/K/M/P16	VN□□1604□□	VN□□1604□□	VN□□1604□□	VN□□1604□□

Corresponding tool holders of insert VN□□ M-type clamping

MVJNR/L
KAPR:93°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Wrench	Clamp	Pin
		R	L	H	B	LF	HF	WF	LH					
MVJNR/L	**1616K16**	△	△	16	16	125	16	20	45	DM6×25	V16BM	WH20L WH30L	C3RD	TM5×13
	2020K16	▲	▲	20	20	125	20	25	45	DM6×25				
	2525M16	▲	▲	25	25	150	25	32	45	DM6×30				
	3225P16	▲	▲	32	25	170	32	32	45	DM6×30				
	3232P16	▲	▲	32	32	170	32	40	45					
	4040P16	△	△	40	40	170	40	50	65					

▲Stock available △Make-to-order

Applicable inserts

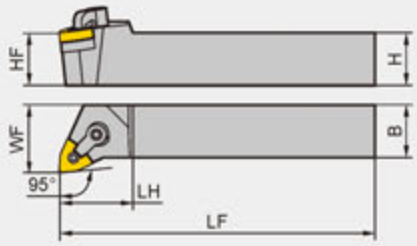
Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	**XF**  A85	**XM**  A86	**SNR**  A87	**TC**  A87
	DF  A85	**PM**  A86		
	EF  A85	**DM**  A86		
	ADF  A85	**EM**  A87		
	SF  A86	**EG**  A87		
	NF  A85	**NM**  A87		
	NGF  A86			
Tool holder type: **MVJNR/L□□ K/M/P16**	VN□□1604□□	VN□□1604□□	VN□□1604□□	VN□□1604□□

Corresponding tool holders of insert WN□□ M-type clamping

MWLNR/L

KAPR:95°

R-type shown



Type		Stock R	Stock L	Basic dimensions(mm) H	B	LF	HF	WF	LH	Screw	Shim	Wrench	Clamp	Pin
MWLNR/L	1616H06	△	△	16	16	100	16	20	28	DM6×25	W06BM	WH20L WH30L	C1RD	TM5×13
	2020K06	▲	▲	20	20	125	20	25	30	DM6×25				
	2525M06	▲	▲	25	25	150	25	32	30	DM6×30				
	1616H08	△	△	16	16	100	16	20	30	DM6×25	W08BM	WH30L	C1RD	TM6×17
	2020K08	▲	▲	20	20	125	20	25	30	DM6×25				
	2525M08	▲	▲	25	25	150	25	32	35	DM6×30				
	3525P08	▲	▲	32	25	170	32	32	35	DM6×30				
	3232P08	▲	▲	32	32	170	32	40	35					
	4040R08	△	△	40	40	200	40	50	35					

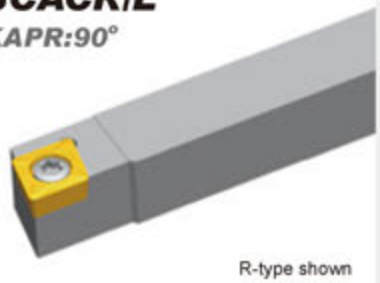
▲Stock available △Make-to-order

Applicable inserts

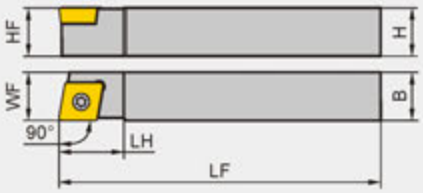
Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A88	XM A90	DR Double-side A92	TC A93
	DF A88	PM A90	SNR Double-side A92	Without chipbreaker A93
	SF A88	DM A91		
	EF A89	EM A91		
	ES A89	EG A91		
	ADF A89	EH A92		
	NF A89	NM A92		
Tool holder type MWLNR/L□□H/K/M06	WN□□0604□□	WN□□0604□□	WN□□0604□□	WN□□0604□□
Tool holder type MWLNR/L□□H/K/M/P/R08	WN□□0804□□	WN□□0804□□	WN□□0804□□	WN□□0804□□

Corresponding tool holders of insert CC□□ S-type clamping

SCACR/L
KAPR:90°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Wrench
		R	L	H	B	LF	HF	WF	LH		
SCACR/L	0808F06	△	△	8	8	80	8	8	16	I60M2.5×6.5	WT07IP
	1010H06	▲	△	10	10	100	10	10	16		
	1212H06	△	△	12	12	100	12	12	16		
	1212H09	▲	▲	12	12	100	12	12	16	I60M3.5×8	WT15IP
	1616H09	△	△	16	16	100	16	16	16		

▲Stock available △Make-to-order

Applicable inserts

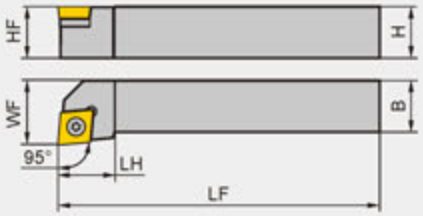
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF  A95	XF  A95	XM  A96	HR  A98	TC  A98	LH  A99
		HF  A95	HM  A97			LC  A99
		EF  A96	EF  A97			
		AHF  A96	EG  A97			
Tool holder type: SCACR/L□□H/F06	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CCGX 0602□□
Tool holder type: SCACR/L□□H09	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CCGX 09T3□□

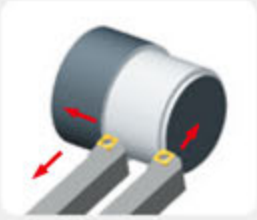
Corresponding tool holders of insert CC□□ S-type clamping

SCLCR/L

KAPR:95°

R-type shown





Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SCLCR/L	0808F06	▲	△	08	08	80	08	10	12	I60M2.5×6.5	---	---	WT07IP
	1010F06	▲	▲	10	10	80	10	12	12				
	1212H06	△	△	12	12	100	12	16	12				
	1616H06	△	△	16	16	100	16	20	16				
	1212H09	▲	▲	12	12	100	12	16	16	I60M3.5×8	---	---	WT15IP
	1616H09	▲	▲	16	16	100	16	20	16				
	2020K09	△	△	20	20	125	20	25	25				
	2525M09	△	△	25	25	150	25	32	25				
	2020K12	▲	▲	20	20	125	20	25	25	I60M4×11X	C12BS	SM6×10XA	WT15IP WH40L
	2525M12	▲	▲	25	25	150	25	32	25				
	3225M12	▲	▲	32	25	150	32	32	25				

▲Stock available △Make-to-order

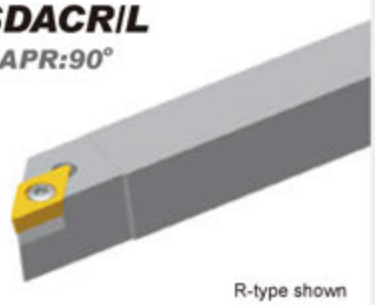
Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF A95	XF A95	XM A96	HR A98	TC A98	LH A99
		HF A95	HM A97			LC A99
		EF A96	EF A97			
		AHF A96	EG A97			

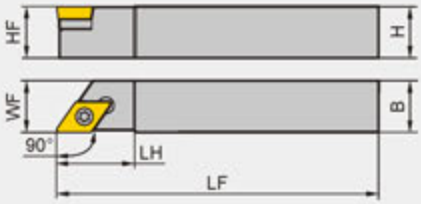
Tool holder type							
	SCLCR/L□□H/F06	CC□□ 0602□□	CC□□ 0602□□	CC□□ 0602□□	CC□□ 0602□□	CC□□ 0602□□	CCGX 0602□□
	SCLCR/L□□H/K/M09	CC□□ 09T3□□	CC□□ 09T3□□	CC□□ 09T3□□	CC□□ 09T3□□	CC□□ 09T3□□	CCGX 09T3□□
	SCLCR/L□□K/M12		CC□□ 1204□□	CC□□ 1204□□	CC□□ 1204□□	CC□□ 1204□□	CCGX 1204□□

Corresponding tool holders of insert DC□□ S-type clamping

SDACR/L
KAPR:90°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SDACR/L	0808K07	△	△	8	8	125	8	8	15	I60M2.5×6.5	---	---	WT07IP
	1010K07	△	△	10	10	125	10	10	15				
	1212K07	△	△	12	12	125	12	12	15				
	1212K11	△	△	12	12	125	12	12	24	I60M3.5×8	---	---	WT15IP
	1616K11	△	△	16	16	125	16	16	24	I60M3.5×12	D11BS	SM5×8.65XA	WT15IP WH35L
	2020K11	△	△	20	20	125	20	20	24				
	2525M11	△	△	25	25	150	25	25	24				

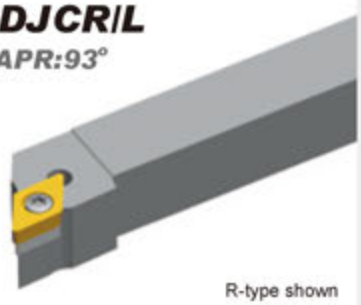
▲Stock available △Make-to-order

Applicable inserts

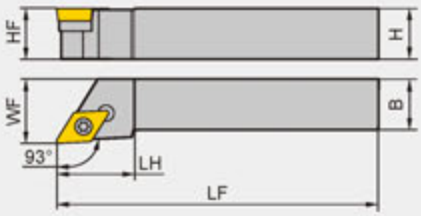
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF A100	XF A100	XM A101	HR A102	LH A103
		HF A100	HM A102		LC A103
		EF A101	EM A102		
		AHF A101			
Tool holder type: SDACR/L□□K07	DC□□ 0702□□	DC□□ 0702□□	DC□□ 0702□□		DCGX 0702□□
Tool holder type: SDACR/L□□K/M11	DC□□ 11T3□□	DC□□ 11T3□□	DC□□ 11T3□□	DC□□ 11T3□□	DCGX 11T3□□

Corresponding tool holders of insert DC□□ S-type clamping

SDJCR/L
KAPR:93°



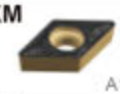
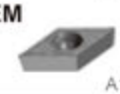
R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SDJCR/L	0808F07	△	△	8	8	80	8	10	15	I60M2.5×6.5	---	---	WT07IP
	1010F07	▲	△	10	10	80	10	12	15				
	1212H07	▲	▲	12	12	100	12	16	15				
	1414H07	△	△	14	14	100	14	18	15				
	1616H07	▲	▲	16	16	100	16	20	18				
	2020K07	△	△	20	20	125	20	25	24				
	2525M07	△	△	25	25	150	25	32	28				
	1212K11	△	△	12	12	125	12	16	22	I60M3.5×10	D11BS	SM5×7XA	WT15IP WH35L
	1616K11	▲	▲	16	16	125	16	20	22	I60M3.5×12		SM5×8.65XA	
	2020K11	▲	▲	20	20	125	20	25	24				
	2525M11	▲	▲	25	25	150	25	32	24				

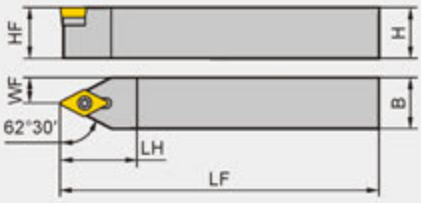
▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type: SDJCR/L□□F/H/K/M07	DC□□0702□□	DC□□ 0702□□	DC□□0702□□		DCGX 0702□□
Tool holder type: SDJCR/L□□K/M11	DC□□ 11T3□□	DC□□ 11T3□□	DC□□11T3□□	DC□□11T3□□	DCGX 11T3□□

Corresponding tool holders of insert DC□□ S-type clamping

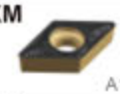
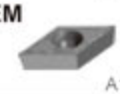
SDNCN
KAPR:62°30'



Type		Stock	Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
			H	B	LF	HF	WF	LH				
SDNCN	**0808F07**	△	8	8	80	8	4	20	I60M2.5×6.5	---	---	WT07IP
	1010F07	▲	10	10	80	10	5	20				
	1212H07	▲	12	12	100	12	6	20				
	1616H07	△	16	16	100	16	8	20				
	2020K07	△	20	20	125	20	10	25				
	2525M07	△	25	25	150	25	12.5	30				
	1616K11	▲	16	16	125	16	8	30	I60M3.5×12	D11BS	SM5×8.65XA	WT15IP WH35L
	2020K11	▲	20	20	125	20	10	30				
	2525M11	▲	25	25	150	25	12.5	30				
	3225M11	△	32	25	150	32	12.5	30				
	3232P11	△	32	32	170	32	16	30				

▲Stock available △Make-to-order

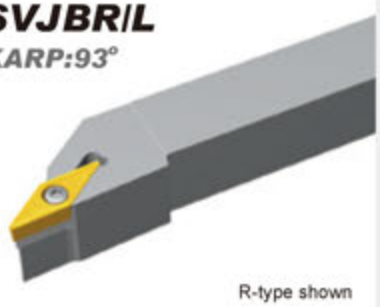
Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type: **SDNCN□□F/H/K/M07**	DC□□0702□□	DC□□ 0702□□	DC□□0702□□		DCGX 0702□□
Tool holder type: **SDNCN□□K/M/P11**	DC□□ 11T3□□	DC□□ 11T3□□	DC□□11T3□□	DC□□11T3□□	DCGX 11T3□□

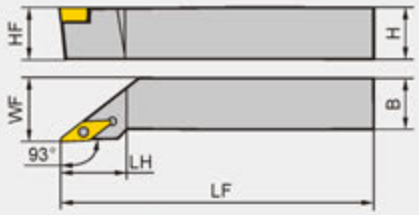
Corresponding tool holders of insert VB□□ S-type clamping

SVJBR/L

KARP:93°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SVJBR/L	1212H11	▲	▲	12	12	100	12	16	25	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	▲	16	16	100	16	20	27				
	2020K11	▲	▲	20	20	125	20	25	25				
	2525M11	▲	▲	25	25	150	25	32	30				
	1616H16	▲	▲	16	16	100	16	20	35	I60M3.5×12	V16BS	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	▲	20	20	125	20	25	40				
	2525M16	▲	▲	25	25	150	25	32	40				

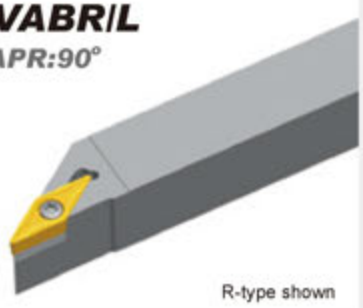
▲Stock available △Make-to-order

Applicable inserts

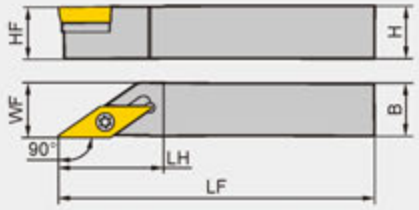
Application	For extra finishing	For finishing	For semi-finishing	For roughing
Inserts shape	SF  A117	XF  A117	XM  A118	HR  A119
		HF  A117	HM  A119	SNR  A119
		NF  A118	EM  A118	
		EF  A117		
		NGF  A118		
		AHF  A118		
Tool holder type: SVJBR/L□□H/K/M11	VB□□1103□□	VB□□1103□□	VB□□1103□□	
Tool holder type: SVJBR/L□□H/K/M16		VB□□1604□□	VB□□1604□□	VB□□1604□□

Corresponding tool holders of insert VB□□ S-type clamping

SVABR/L
KAPR:90°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SVABR/L	1010F11	△	△	10	10	80	10	10	25	I60M2.5×6.5	---	---	WT07IP
	1616H16	△	△	16	16	100	16	16	32	I60M3.5×12	V16BS	SM5×8.65XA	WT15IP WH35L
	2020K16	△	△	20	20	125	20	20	32				
	2525M16	△	△	25	25	150	25	25	38				

▲Stock available △Make-to-order

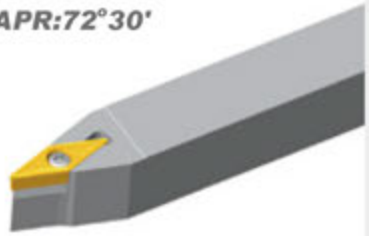
Applicable inserts

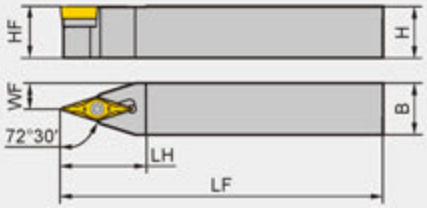
Application	For extra finishing	For finishing	For semi-finishing	For roughing
Inserts shape	SF A117	XF A117	XM A118	HR A119
		HF A117	HM A119	SNR A119
		NF A118	EM A118	
		EF A117		
		NGF A118		
		AHF A118		
Tool holder type: SVABR/L□□F11	VB□□1103□□			
Tool holder type: SVABR/L□□H/K/M16		VB□□1604□□	VB□□1604□□	VB□□1604□□

Corresponding tool holders of insert VB□□ S-type clamping

SVVBN

KAPR:72°30'





Type		Stock	Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
			H	B	LF	HF	WF	LH				
SVVBN	1212H11	▲	12	12	100	12	6	25	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	16	16	100	16	8	25				
	2020K11	▲	20	20	125	20	10	30				
	2525M11	△	25	25	150	25	12.5	35				
	1616H16	▲	16	16	100	16	8	35	I60M3.5×12	V16BS	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	20	20	125	20	10	35				
	2525M16	▲	25	25	150	25	12.5	35				

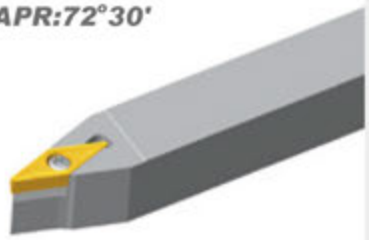
▲Stock available △Make-to-order

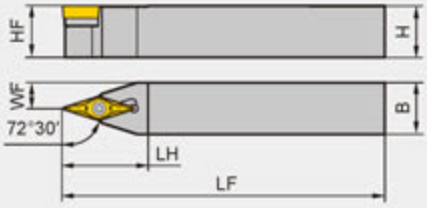
Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing
Inserts shape	SF  A117	XF  A117	XM  A118	HR  A119
		HF  A117	HM  A119	SNR  A119
		NF  A118	EM  A118	
		EF  A117		
		NGF  A118		
		AHF  A118		
Tool holder type: SVJBR/L□□H/K/M11	VB□□1103□□	VB□□1103□□	VB□□1103□□	
Tool holder type: SVJBR/L□□H/K/M16		VB□□1604□□	VB□□1604□□	VB□□1604□□

Corresponding tool holders of insert VC□□ S-type clamping

SVVCN
KAPR:72°30'





Type		Stock	Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
			H	B	LF	HF	WF	LH				
SVVCN	1212H11	▲	12	12	100	12	6	25	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	16	16	100	16	8	27				
	2020K11	▲	20	20	125	20	10	30				
	2525M11	△	25	25	150	25	12.5	38				
	1616H16	▲	16	16	100	16	8	33	I60M3.5×12	V16BSC	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	20	20	125	20	10	33				
	2525M16	▲	25	25	150	25	12.5	38				

▲Stock available △Make-to-order

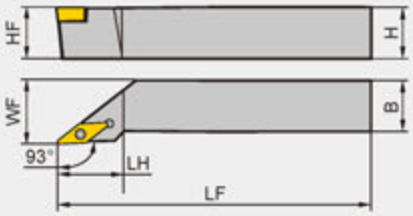
Applicable inserts

Application	For extra finishing	For finishing	For Al machining
Inserts shape	SF  A114	XF  A114	LH  A116
		NF  A114	LC  A116
		NGF  A114	
		AHF  A114	
Tool holder type	SVVCN□□H/K/M11	VC□□1103□□	VC□□1103□□	VCGX1103□□
	SVVCN□□H/K/M16		VC□□1604□□	VCGX1604□□

Corresponding tool holders of insert VC□□ S-type clamping

SVJCR/L
KAPR:93°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SVJCR/L	1212H11	△	△	12	12	100	12	16	25	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	▲	16	16	100	16	20	27				
	2020K11	▲	▲	20	20	125	20	25	27				
	2525M11	▲	▲	25	25	150	25	32	27				
	1616H16	▲	▲	16	16	100	16	20	36	I60M3.5×12	V16BSC	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	▲	20	20	125	20	25	41				
	2525M16	▲	▲	25	25	150	25	32	41				

▲Stock available △Make-to-order

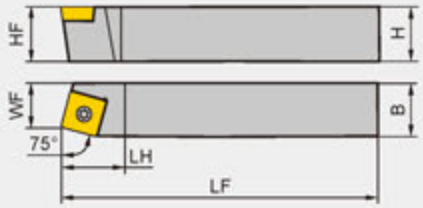
Applicable inserts

Application	For extra finishing	For finishing	For Al machining
Inserts shape	SF  A114	XF  A114	LH  A116
		NF  A114	LC  A116
		NGF  A114	
		AHF  A114	
Tool holder type: SVVCN□□H/K/M11	VC□□1103□□	VC□□1103□□	VCGX1103□□
Tool holder type: SVVCN□□H/K/M16		VC□□1604□□	VCGX1604□□

Corresponding tool holders of insert SC□□ S-type clamping

SSBCR/L
KAPR:75°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SSBCR/L	1212H09	▲	▲	12	12	100	12	9	16	I60M3.5×8	---	---	WT15IP
	1616H09	▲	▲	16	16	100	16	13	16	I60M3.5×12	S09BS	SM5×8.65XA	WT15IP WH35L
	2020K09	△	△	20	20	125	20	17	20				
	2525M09	△	△	25	25	150	25	22	20				
	2020K12	▲	▲	20	20	125	20	17	25	I60M4×11X	S12BS	SM6×10XA	WT15IP WH40L
	2525M12	△	△	25	25	150	25	22	25				

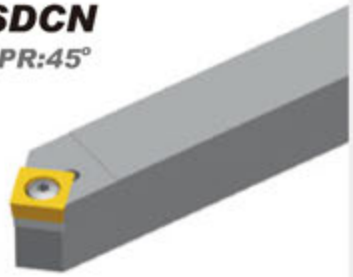
▲Stock available △Make-to-order

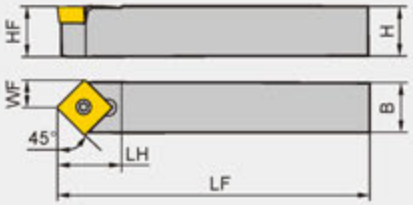
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A106	XM  A107	HR  A108	LH  A108
	HF  A106	HM  A107		LC  A108
	EF  A106	EM  A107		
	AHF  A106			
Tool holder type: SSBCR/L□□H/K/M09	SC□□09T3□□	SC□□09T3□□	SC□□09T3□□	SCGX09T3□□
Tool holder type: SSBCR/L□□K/M12		SC□□1204□□	SC□□1204□□	SCGX1204□□

Corresponding tool holders of insert SC□□ S-type clamping

SSDCN
KAPR:45°





Type		Stock	Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
			H	B	LF	HF	WF	LH				
SSDCN	1212H09	▲	12	12	100	12	6	16	I60M3.5×8	---	---	WT15IP
	1616H09	▲	16	16	100	16	8	16	I60M3.5×12	S09BS	SM5×8.65XA	WT15IP WH35L
	2020K09	△	20	20	125	20	10	20				
	2525M09	△	25	25	150	25	12.5	20				
	2525M12	▲	25	25	150	25	12.5	24	I60M4×11X	S12BS	SM6×10XA	WT15IP WH40L

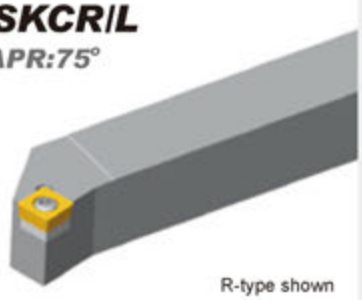
▲Stock available △Make-to-order

Applicable inserts

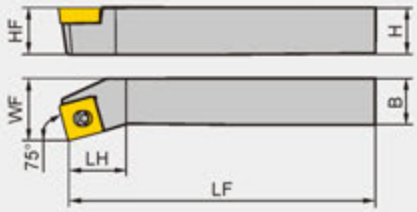
Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A106	XM  A107	HR  A108	LH  A108
	HF  A106	HM  A107		LC  A108
	EF  A106	EM  A107		
	AHF  A106			
Tool holder type: SSDCN□□H/K/M09	SC□□09T3□□	SC□□09T3□□	SC□□09T3□□	SCGX09T3□□
Tool holder type: SSDCN□□M12		SC□□1204□□	SC□□1204□□	SCGX1204□□

Corresponding tool holders of insert SC□□ S-type clamping

SSKCR/L
KAPR:75°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SSKCR/L	1212H09	△	△	12	12	100	12	16	16	I60M3.5×8	---	---	WT15IP
	1616H09	▲	△	16	16	100	16	20	16	I60M3.5×12	S09BS	SM5×8.65XA	WT15IP WH35L
	2020K09	△	△	20	20	125	20	25	20				
	2525M09	△	△	25	25	150	25	32	20				
	2020K12	△	△	20	20	125	20	25	22	I60M4×11X	S12BS	SM6×10XA	WT15IP WH40L
	2525M12	△	△	25	25	150	25	32	22				

▲Stock available △Make-to-order

Applicable inserts

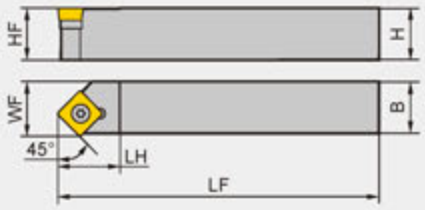
Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A106	XM  A107	HR  A108	LH  A108
	HF  A106	HM  A107		LC  A108
	EF  A106	EM  A107		
	AHF  A106			
Tool holder type: SSKCR/L□□H/K/M09	SC□□09T3□□	SC□□09T3□□	SC□□09T3□□	SCGX09T3□□
Tool holder type: SSKCR/L□□K/M12		SC□□1204□□	SC□□1204□□	SCGX1204□□

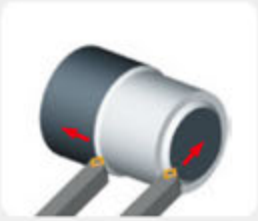
Corresponding tool holders of insert SC□□ S-type clamping

SSSCR/L

KAPR:45°

R-type shown





Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
SSSCR/L	1212H09	△	△	12	12	100	12	13	16	I60M3.5×8	---	---	WT15IP
	1616H09	▲	▲	16	16	100	16	17	16	I60M3.5×12	S09BS	SM5×8.65XA	WT15IP WH35L
	2020K09	△	△	20	20	125	20	21	25				
	2525M09	△	△	25	25	150	25	26	25				
	2020K12	▲	▲	20	20	125	20	21	24	I60M4×11X	S12BS	SM6×10XA	WT15IP WH40L
	2525M12	△	△	25	25	150	25	26	28				

▲Stock available △Make-to-order

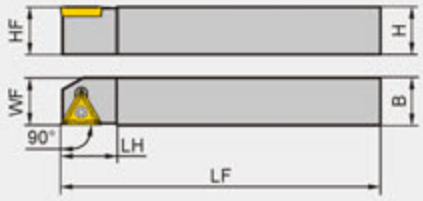
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A106	XM  A107	HR  A108	LH  A108
	HF  A106	HM  A107		LC  A108
	EF  A106	EM  A107		
	AHF  A106			
Tool holder type: SSSCR/L□□H/K/M09	SC□□09T3□□	SC□□09T3□□	SC□□09T3□□	SCGX09T3□□
Tool holder type: SSSCR/L□□K/M12		SC□□1204□□	SC□□1204□□	SCGX1204□□

Corresponding tool holders of insert TC□□ S-type clamping

STACR/L
KAPR:90°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Wrench	---	---
		R	L	H	B	LF	HF	WF	LH			---	---
STACR/L	**1010K11**	△	△	10	10	100	10	10	12	I60M2.5×6.5	WT07IP	---	---
	1212F11	△	△	12	12	80	12	12	14				
	1616K11	△	△	16	16	100	16	16	16				

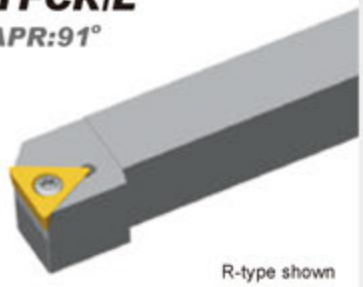
▲Stock available △Make-to-order

Applicable inserts

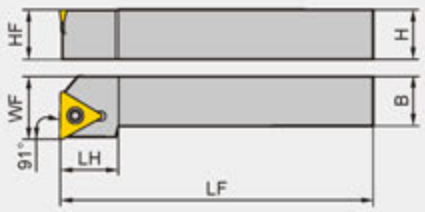
Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A109	XM  A111	HR  A112	LH  A113
	HF  A109	HM  A112		LC  A113
	EF  A109	EM  A111		
	AHF  A111	EG  A111		
Tool holder type: **STACR/L□□K/F11**	TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
STFCR/L□□H/K/M11	TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
STFCR/L□□K/M16	TC□□16T3□□	TC□□16T3□□	TC□□16T3□□	TCGX16T3□□

Corresponding tool holders of insert TC□□ S-type clamping

STFCR/L
KAPR:91°



R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
STFCR/L	1212H11	▲	▲	12	12	100	12	16	14	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	▲	16	16	100	16	20	14				
	2020K11	△	△	20	20	125	20	25	20				
	2525M11	△	△	25	25	150	25	32	20				
	1616K16	▲	▲	16	16	125	16	20	20	I60M3.5×12	T16BS	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	▲	20	20	125	20	25	25				
	2525M16	△	△	25	25	150	25	32	25				

▲Stock available △Make-to-order

Applicable inserts

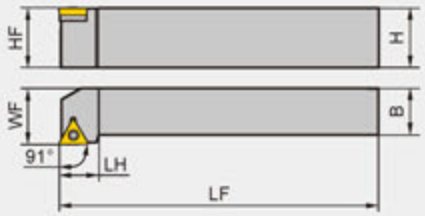
Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A109	XM  A111	HR  A112	LH  A113
	HF  A109	HM  A112		LC  A113
	EF  A109	EM  A111		
	AHF  A111	EG  A111		

Tool holder type					
	STACR/L□□K/F11	TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
	STFCR/L□□H/K/M11	TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
	STFCR/L□□K/M16	TC□□16T3□□	TC□□16T3□□	TC□□16T3□□	TCGX16T3□□

Corresponding tool holders of insert TC□□ S-type clamping

STGCR/L
KAPR:91°

R-type shown



Type		Stock		Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF	LH				
STGCR/L	0808F09	▲	△	08	08	80	8	10	12	I60M2.2×5.5	---	---	WT06IP
	1010F09	▲	▲	10	10	80	10	12	12				
	1212H09	△	△	12	12	100	12	16	12				
	1212H11	▲	▲	12	12	100	12	16	16	I60M2.5×6.5	---	---	WT07IP
	1616H11	▲	▲	16	16	100	16	20	20				
	2020K11	△	△	20	20	125	20	25	20				
	2525M11	△	△	25	25	150	25	32	20				
	1616K16	△	△	16	16	125	16	20	20	I60M3.5×12	T16BS	SM5×8.65XA	WT15IP WH35L
	2020K16	▲	▲	20	20	125	20	25	20				
	2525M16	▲	▲	25	25	150	25	32	20				

▲Stock available △Make-to-order

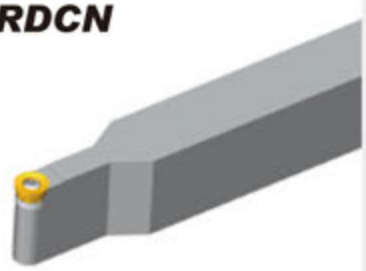
Applicable inserts

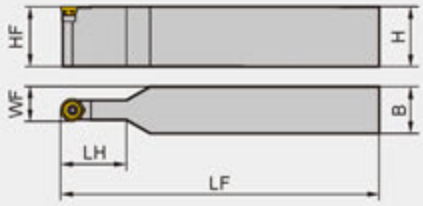
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF  A109	XF  A109	XM  A111	HR  A112	LH  A113
		HF  A109	HM  A112		LC  A113
		EF  A109	EM  A111		
		AHF  A111	EG  A111		

Tool holder type						
	STGCR/L□□F/H09	TC□□0902□□	TC□□0902□□	TC□□0902□□	TC□□0902□□	TCGX0902□□
	STGCR/L□□H/K/M11		TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
	STGCR/L□□K/M16		TC□□16T3□□	TC□□16T3□□	TC□□16T3□□	TCGX16T3□□

Corresponding tool holders of insert RC□□ S-type clamping

SRDCN





Type		Stock	Basic dimensions(mm)						Screw	Shim	Shim screw	Wrench
			H	B	LF	HF	WF	LH				
SRDCN	**1616H08**	△	16	16	100	16	12	16	I60M3×7	---	---	WT09IP
	2020K08	△	20	20	125	20	14	16				
	2525M08	△	25	25	150	25	16.5	16				
	2020K10	△	20	20	125	20	15	20	I60M3.5×10	---	---	WT15IP
	2525M10	▲	25	25	150	25	17.5	25				
	2525M12	▲	25	25	150	25	18.5	35	I60M3.5×12	R12BS	SM5×8.65XA	WT15IP WH35L
	3232P12	△	32	32	170	32	22	35				
	3225P16	▲	32	25	170	32	20.5	35	I60M4×15X	R16BS	SM6×10XA	WT15IP WH40L
	4040S16	△	40	40	250	40	28	40				

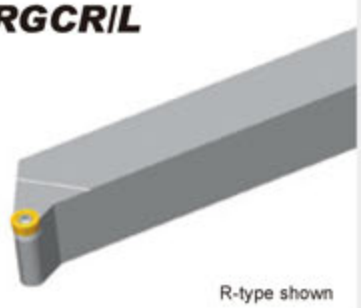
▲Stock available △Make-to-order

Applicable inserts

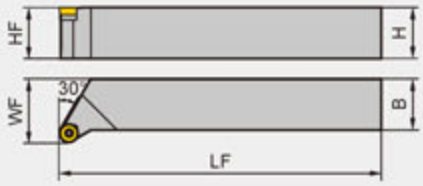
Application		For semi-finishing	For roughing	For Al machining
Inserts shape		 A104	 A104	LH  A104
Tool holder type	**SRDCN□□K/M/H08**	RCMT0803MO	RCMT0803MO	RCGX0803MO-LH
	SRDCN□□K/M10	RCMT10T3MO	RCMT10T3MO	
	SRDCN□□M/P12	RCMT1204MO	RCMT1204MO	
	SRDCN□□P/S16	RCMT1606MO	RCMT1606MO	

Corresponding tool holders of insert RC□□ S-type clamping

SRGCR/L



R-type shown



Type		Stock		Basic dimensions(mm)					Screw	Shim	Shim screw	Wrench
		R	L	H	B	LF	HF	WF				
SRGCR/L	1616H08	△	△	16	16	100	16	20	I60M3×7	---	---	WT09IP
	2020K08	△	△	20	20	125	20	25				
	2525M08	△	△	25	25	150	25	32				
	1616H10	△	△	16	16	100	16	20	I60M3.5×10	---	---	WT15IP
	2020K10	▲	▲	20	20	125	20	25				
	2525M10	▲	▲	25	25	150	25	32				
	2020K12	▲	△	20	20	125	20	27	I60M3.5×12	R12BS	SM5×8.65XA	WT15IP WH35L
	2525M12	▲	▲	25	25	150	25	32				
	3232P16	▲	△	32	32	170	32	40	I60M4×15X	R16BS	SM6×10XA	WT15IP WH40L

▲Stock available △Make-to-order

Applicable inserts

Application		For semi-finishing	For roughing	For Al machining
Inserts shape		 A104	 A104	LH  A104
Tool holder type	SRGCR/L□□H/K/M08	RCMT0803MO	RCMT0803MO	RCGX0803MO-LH
	SRGCR/L□□H/K/M10	RCMT10T3MO	RCMT10T3MO	
	SRGCR/L□□K/M12	RCMT1204MO	RCMT1204MO	
	SRGCR/L□□P16	RCMT1606MO	RCMT1606MO	

How to select internal turning tools

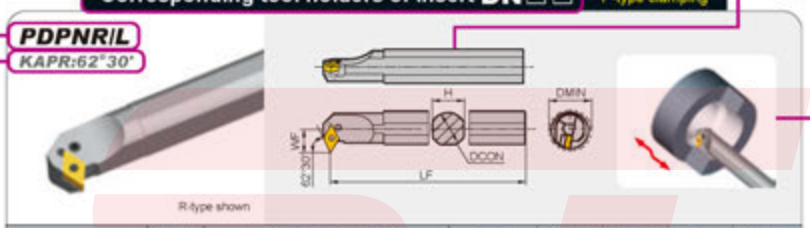
Explanation of internal turning tools detailed table

● Listed according to clamping types.

- Approach angle of tools
- Tools type
  The first 4 letters in the type description stands for tool shape and applicatio.
- Insert type
- Specification chart
- Application chart
  The arrow shows suitable applications such as internal turning, profiling and end turning, etc.

Corresponding tool holders of insert DN□□ P-type clamping

PDPNR/L
KAPR:62°30'



R-type shown

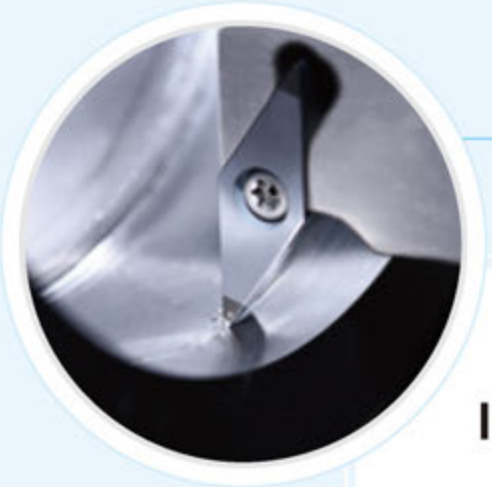
Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S32T-PDPNR/L15-3	▲	▲	40	32	30	300	22	LEM8×21	WH00L	L4	D15AP	SP4
S40U-PDPNR/L15-3	▲	▲	50	40	38	350	27					
S32T-PDPNR/L15	△	△	40	32	30	300	22	LEM8×21	WH00L	L4B	D15AP	SP4
S40U-PDPNR/L15	△	△	50	40	38	350	27					

▲Stock available △Make-to-order

Applicable inserts

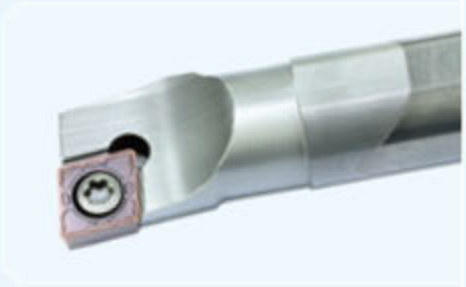
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A68	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type □□-PDPNR/L15-3	DN□□1504□□	DN□□1504□□	DN□□1504□□		DN□□1504□□
Tool holder type □□-PDPNR/L15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□

- Tool holders with oil hole
- Products specification
  Including product description, stock (left and right hand), basic dimensions and applicable spare parts.
- Applicable inserts
  Including applications of inserts, reference page, insert shape and corresponding tool holders.



TURNING A

Internal turning tools



Internal turning tools

Name	Feature	62°30′	75°	90°	91°	93°	93°	93°	95°	107°30′
P-type internal turning tools	• The minimum machining diameter is 20mm. • Applicable inserts are economic negative inserts. • Hole clamping	PDPN A195	PSKN A197	PTFN A198			PDUN A196		PCLN A194	
									PWLN A199	
S-type internal turning tools	• The minimum machining diameter is 10mm. • Applicable inserts are 5°, 7° and 11° positive inserts. • Screw clamping.		SSKC A204	SCFC A214	STFC A205	STUP A213	SDUC A202	SDZC A203		SDQC A201
							SDUP A212		SCLC A200	SDQP A211
							SVUC A207		A215	SVQB A208
							SVUB A209		SCLP A210	SVQC A206
Damping internal turning tools	• The minimum diameter can be machined is 12mm. • Applicable inserts are 7°, 11°positive inserts. • Good Performance on reducing shake.					STUP A220	SDUP A219		SCLP A217	SDQP A218
							SVUC A221			SVQC A221

Internal turning tools code key

Type of tool holder

Code	Type
A	Steel tool holder with oil-hole
C	Cemented carbide tool holder
E	Cemented carbide tool holder with oil hole
S	Steel tool holder
X	Special inserts applied

Diameter of tool holder

Code	Diameter
08	08
10	10
16	16
20	20
25	25
32	32
40	40
50	50

Length of tool holder

Code	Length
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

Clamping system

P-Hole clamping

M-Top and hole clamping

S-Screw on

C-Top clamping

Inserts shape

C

D

R

S

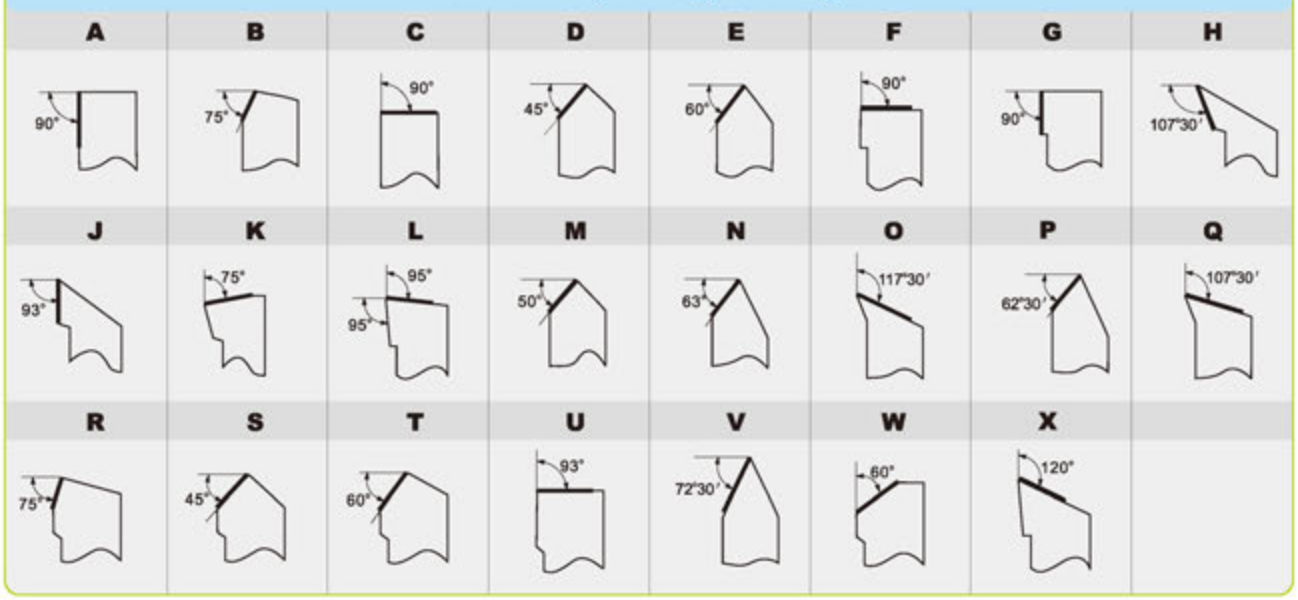
T

V

W

S 16 R - S D U

Tool holder style and approach angle



Clearance angle of insert	
5°	B
7°	C
15°	D
20°	E
0°	N
11°	P

Cutting direction
L - Left hand
R - Right hand

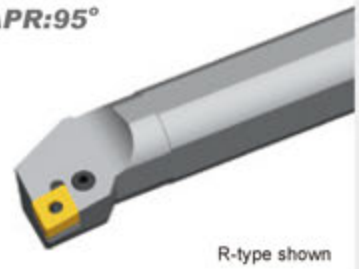
Manufacture option	
D	Increase offset f size+1.0mm
E	Increase offset f size+2.0mm
R	Round shank
W	Wedge clamping
X	Back boring

C R 07 ■

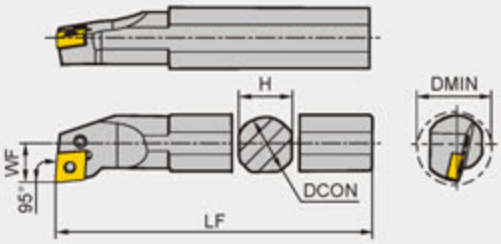
Length of cutting edge							
Inserts shape	C	D	R	S	T	V	W
Inscribed circle	Length of cutting edge(mm)						
5.556	---	---	---	---	09	---	---
6.350	06	07	---	---	11	---	---
9.525	09	11	09	09	16	16	06
12.700	12	15	12	12	22	22	08
15.875	16	19	15	15	27	---	---
19.050	19	---	19	19	33	---	---
25.400	25	---	25	25	44	---	---

Corresponding tool holders of insert CN□□ P-type clamping

PCLNR/L
KAPR:95°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S16Q-PCLNR/L09	△	△	20	16	15	180	11	LEM5×9B	WT09P	L3C	---	---
S20R-PCLNR/L09	△	△	25	20	18	200	13	LEM5×9B				
S25S-PCLNR/L09	△	△	32	25	23	250	17	LEM5×9B				
S25S-PCLNR/L12	△	△	32	25	23	250	17	LEM6×13.4A	WH25L	L4A	---	---
S32T-PCLNR/L12	▲	▲	44	32	30	300	22	LEM8×21	WH30L	L4	C12APB	SP4
S40U-PCLNR/L12	▲	▲	54	40	38	350	27					
S50V-PCLNR/L12	▲	▲	63	50	47	400	35					
S50V-PCLNR/L16	△	△	63	50	48	400	31	LEM8×25	WH30L	L5	C16AP	SP5
S50S-PCLNR/L19	△	△	63	50	47	250	35	LEM10×27	WH40L	L6	C19AP	SP6
S50W-PCLNR/L19	▲	▲	63	50	47	450	35					

▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59
	SF A52	DM A54	ER Double-side A57		
	EF A52	EM A55	ER Single-side A57		
	ADF A53	EG A55	SNR Double-side A57		
	NF A53	EH A55	LR Single-side A56		
		NM A55			

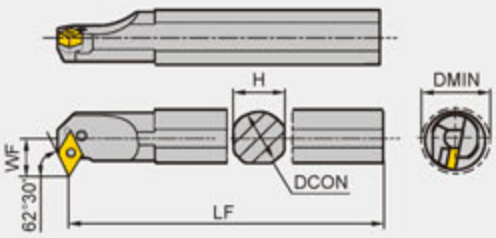
Tool holder type	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
□□-PCLNR/L09	CN□□0903□□	CN□□0903□□			
□□-PCLNR/L12	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□	CN□□1204□□
□□-PCLNR/L16	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□	CN□□1606□□
□□-PCLNR/L19		CN□□1906□□	CN□□1906□□	CN□□1906□□	CN□□1906□□

Corresponding tool holders of insert DN□□ P-type clamping

PDPNR/L

KAPR:62°30'

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S32T-PDPNR/L15-3	▲	▲	40	32	30	300	22	LEM8×21	WH30L	L4	D15AP	SP4
S40U-PDPNR/L15-3	▲	▲	50	40	38	350	27					
S32T-PDPNR/L15	△	△	40	32	30	300	22	LEM8×21	WH30L	L4B	D15AP	SP4
S40U-PDPNR/L15	△	△	50	40	38	350	27					

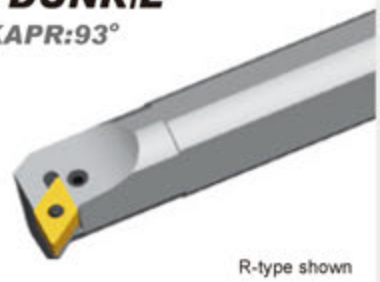
▲Stock available △Make-to-order

Applicable inserts

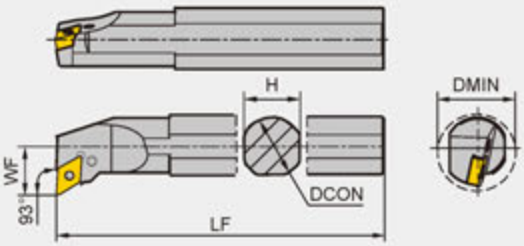
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type: □□-PDPNR/L15-3	DN□□1504□□	DN□□1504□□	DN□□1504□□		DN□□1504□□
Tool holder type: □□-PDPNR/L15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□

Corresponding tool holders of insert DN□□ P-type clamping

PDUNR/L
KAPR:93°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S20R-PDUNR/L11	△	△	25	20	19	200	13	LEM5×12B	WT09P	L3D	---	---
S25S-PDUNR/L11	△	△	32	25	23	250	17					
S32T-PDUNR/L15	△	△	40	32	30	300	22	LEM8×21	WH30L	L4B	D15AP	SP4
S32T-PDUNR/L15-3	△	△	40	32	30	300	22	LEM8×21	WH30L	L4	D15AP	SP4
S40U-PDUNR/L15	△	△	50	40	38	350	27	LEM8×21	WH30L	L4B	D15AP	SP4
S40U-PDUNR/L15-3	▲	▲	50	40	38	350	27	LEM8×21	WH30L	L4	D15AP	SP4

▲Stock available △Make-to-order

Applicable inserts

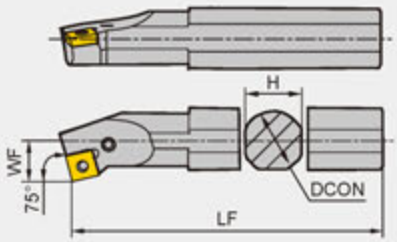
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				

Tool holder type						
	□□-PDUNR/L11	DN□□1104□□	DN□□1104□□			DN□□1104□□
	□□-PDUNR/L15-3	DN□□1504□□	DN□□1504□□	DN□□1504□□		DN□□1504□□
	□□-PDUNR/L15	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□	DN□□1506□□

Corresponding tool holders of insert SN□□ P-type clamping

PSKNR/L
KAPR:75°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S25S-PSKNR/L12	▲	▲	32	25	23	250	17	LEM6×13.4A	WH25L	L4A	---	---
S32T-PSKNR/L12	△	△	41	32	30	300	22	LEM8×21	WH30L	L4	S12APB	SP4
S40U-PSKNR/L12	△	△	50	40	38	350	27					

▲Stock available △Make-to-order

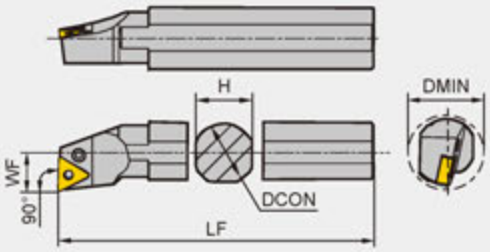
Applicable inserts

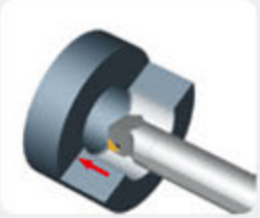
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		
Tool holder type: □□-PSKNR/L12	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□	SN□□1204□□

Corresponding tool holders of insert TN□□ P-type clamping

PTFNR/L
KAPR:90°

R-type shown





Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S25S-PTFNR/L16	▲	▲	32	25	23	250	17	LEM5×12B	WT09P	L3B	---	---
S32T-PTFNR/L16	△	△	41	32	30	300	21	LEM6×17	WH25L	L3	T16APB	SP3
S40U-PTFNR/L16	△	△	50	40	38	350	26					

▲Stock available △Make-to-order

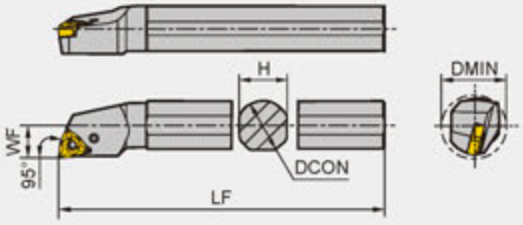
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF  A78	XM  A80	DR Double-side  A82	HDR  A84	TC  A84
	DF  A78	PM  A80	DR Single-side  A83		Without chipbreaker  A84
	SF  A78	DM  A81	ER Double-side  A83		
	EF  A79	EM  A81	SNR Double-side  A83		
	ES  A79	EG  A81	LR Single-side  A82		
	ADF  A79	EH  A82			
Tool holder type □□-PTFNR/L16	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□	TN□□1604□□

Corresponding tool holders of insert WN□□ P-type clamping

PWLNR/L
KAPR:95°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S16R-PWLNR/L06	△	△	22	16	15	200	11	LEM5X12B	WT09P	L3B	---	---
S20R-PWLNR/L06	△	△	25	20	18	200	13			L3B		
S25S-PWLNR/L06	△	△	35	25	23	250	17					
S20R-PWLNR/L08	△	△	25	20	18	200	13	LEM6X13.4A	WH25L	L4A	---	---
S25S-PWLNR/L08	△	△	32	25	23	250	17					
S32T-PWLNR/L08	△	△	40	32	30	300	22	LEM8X21	WH30L	L4	W08AP	SP4

▲Stock available △Make-to-order

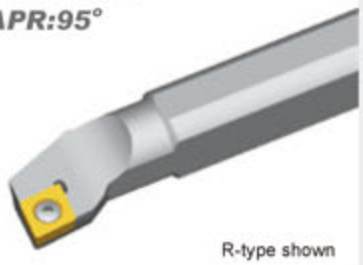
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A88	XM A90	DR Double-side A92	TC A93
	DF A88	PM A90	SNR Double-side A92	Without chipbreaker A93
	SF A88	DM A91		
	EF A89	EM A91		
	ES A89	EG A91		
	ADF A89	EH A92		
	NF A89	NM A92		
Tool holder type □□-PWLNR/L06	WN□□0604□□	WN□□0604□□	WN□□0604□□	WN□□0604□□
Tool holder type □□-PWLNR/L08	WN□□0804□□	WN□□0804□□	WN□□0804□□	WN□□0804□□

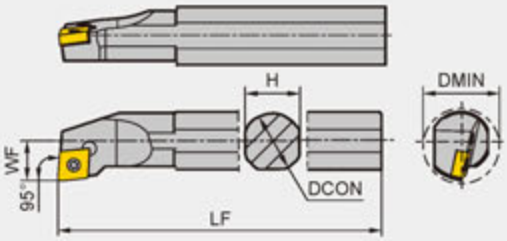
Corresponding tool holders of insert CC□□ S-type clamping

SCLCR/L

KAPR:95°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S08K-SCLCR/L06	▲	▲	10	8	7.4	125	5	I60M2.5×5.5	WT07IP	---	---
S10K-SCLCR/L06	▲	▲	13	10	9	125	6				
S12M-SCLCR/L06	▲	▲	16	12	11	150	9	I60M2.5×6.5			
S12M-SCLCR/L09	▲	▲	16	12	11	150	9	I60M3.5×8	WT15IP	---	---
S14N-SCLCR/L09	△	△	18	14	13	160	9				
S16Q-SCLCR/L09	△	△	20	16	15	180	11				
S20R-SCLCR/L09	△	△	25	20	18	200	13	I60M3.5×8			
S25S-SCLCR/L09	△	△	32	25	23	250	17	I60M3.5×10	WT15IP	---	---
S20R-SCLCR/L12	△	△	25	20	19	200	12.5	I60M4×11X	WT15IP	---	---
S25S-SCLCR/L12	▲	▲	32	25	23	250	17	I60M4×11X	WT15IP	---	---
S32T-SCLCR/L12	△	△	40	32	30	300	22	I60M4×11X	WH40L WT15IP	C12BS	SM6×10XA
S40U-SCLCR/L12	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

Applicable inserts

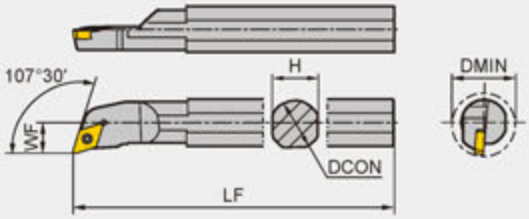
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF A95	XF A95	XM A96	HR A98	TC A98	LH A99
		HF A95	HM A97			LC A99
		EF A96	EM A97			
		AHF A96	EG A97			

Tool holder type						
□□-SCLCR/L06	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□		CCGX0602□□
□□-SCLCR/L09	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□		CC□□09T3□□	CCGX09T3□□
□□-SCLCR/L12		CC□□1204□□	CC□□1204□□		CC□□1204□□	CCGX1204□□

Corresponding tool holders of insert DC□□ S-type clamping

SDQCR/L
KAPR:107°30'

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF			---	---
S10K-SDQCR/L07	▲	▲	13	10	9	125	7	I60M2.5×5.5	WT07IP	---	---
S12M-SDQCR/L07	▲	▲	16	12	11	150	9	I60M2.5×6.5			
S16Q-SDQCR/L07	△	△	20	16	15	180	11				
S20R-SDQCR/L11	△	△	25	20	18	200	13	I60M3.5×8	WT15IP	---	---
S25S-SDQCR/L11	△	△	32	25	23	250	17	I60M3.5×10			
S32T-SDQCR/L11	△	△	40	32	30	300	22	I60M3.5×8			
S40U-SDQCR/L11	△	△	50	40	37	350	27	I60M3.5×10			

▲Stock available △Make-to-order

Applicable inserts

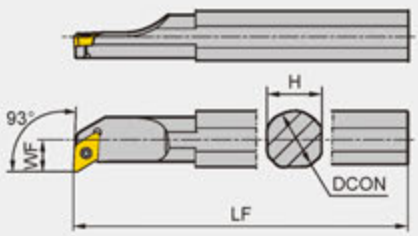
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type □□-SDQCR/L07	DC□□0702□□	DC□□0702□□	DC□□0702□□		DCGX0702□□
Tool holder type □□-SDQCR/L11	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DCGX11T3□□

Corresponding tool holders of insert DC□□ S-type clamping

SDUCR/L

KAPR:93°

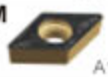
R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF			---	---
S10K-SDUCR/L07	▲	▲	13	10	9	125	7	I60M2.5×5.5	WT07IP	---	---
S12M-SDUCR/L07	▲	▲	16	12	11	150	9	I60M2.5×6.5			
S16Q-SDUCR/L07	△	△	20	16	15	180	11				
S20R-SDUCR/L11	△	△	25	20	18	200	13	I60M3.5×8	WT15IP	---	---
S25S-SDUCR/L11	△	△	32	25	23	250	17	I60M3.5×10			
S32T-SDUCR/L11	△	△	40	32	30	300	22				
S40U-SDUCR/L11	△	△	50	40	37	350	27				

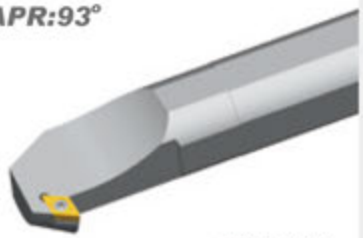
▲Stock available △Make-to-order

Applicable inserts

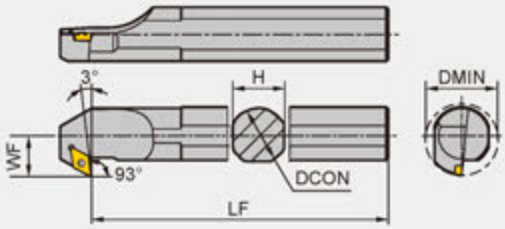
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type □□-SDUCR/L07	DC□□0702□□	DC□□0702□□	DC□□0702□□		DCGX0702□□
Tool holder type □□-SDUCR/L11	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DCGX11T3□□

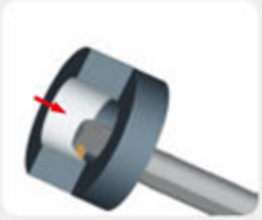
Corresponding tool holders of insert DC□□ S-type clamping

SDZCR/L
KAPR:93°



R-type shown





Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S25S-SDZCR/L11	△	△	32	25	23	250	17	I60M3.5×10	WT15IP	---	---
S32T-SDZCR/L11	△	△	40	32	30	300	22	I60M3.5×12	WT15IP WH35L	D11BS	SM5×8.65XA
S40U-SDZCR/L11	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

Applicable inserts

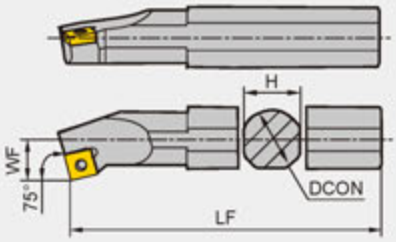
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	SF A100	XF A100	XM A101	HR A102	LH A103
		HF A100	HM A102		LC A103
		EF A101	EM A102		
		AHF A101			
Tool holder type □□-SDZCR/L11	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DC□□11T3□□	DCGX11T3□□

Corresponding tool holders of insert SC□□ S-type clamping

SSKCR/L

KAPR:75°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S12M- SSKCR/L09	▲	△	16	12	11	150	9	I60M3.5×8	WT15IP	---	---
S16Q- SSKCR/L09	△	△	20	16	15	180	11				
S20R- SSKCR/L09	△	△	25	20	18	200	13				
S25S- SSKCR/L12	△	△	32	25	23	250	17	I60M4×11X	WT15IP	---	---
S32T- SSKCR/L12	△	△	40	32	30	300	22		WT15IP WH40L	S12BS	SM6×10XA

▲Stock available △Make-to-order

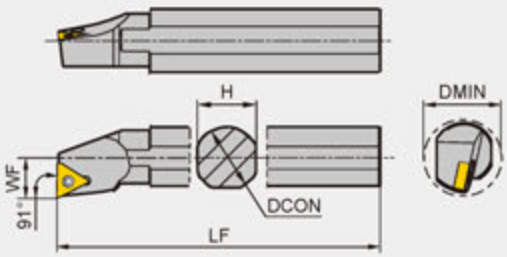
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A106	XM  A107	HR  A108	LH  A108
	HF  A106	HM  A107		LC  A108
	EF  A106	EM  A107		
	AHF  A106			
Tool holder type □□-SSKCR/L09	SC□□09T3□□	SC□□09T3□□	SC□□09T3□□	SCGX09T3□□
Tool holder type □□-SSKCR/L12		SC□□1204□□	SC□□1204□□	SCGX1204□□

Corresponding tool holders of insert TC□□ S-type clamping

STFCR/L
KAPR:91°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S12M-STFCR/L11	▲	▲	16	12	11	150	9	I60M2.5×6.5	WT07IP	---	---
S16Q-STFCR/L11	△	△	20	16	15	180	11				
S20R-STFCR/L11	△	△	25	20	18	200	13				
S25S-STFCR/L16	△	△	32	25	23	250	17	I60M3.5×10	WT15IP	---	---
S32T-STFCR/L16	△	△	40	32	30	300	22	I60M3.5×12	WT15IP WH35L	T16BS	SM5×8.65XA
S40U-STFCR/L16	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

Applicable inserts

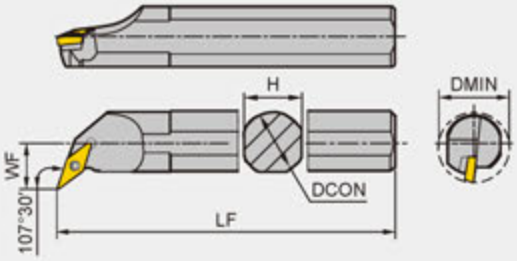
Application	For finishing	For semi-finishing	For roughing	For Al machining
Inserts shape	XF  A109	XM  A111	HR  A112	LH  A113
	HF  A109	HM  A112		LC  A113
	EF  A109	EM  A111		
	AHF  A111	EG  A111		
Tool holder type □□-STFCR/L11	TC□□1102□□	TC□□1102□□	TC□□1102□□	TCGX1102□□
Tool holder type □□-STFCR/L16	TC□□16T3□□	TC□□16T3□□	TC□□16T3□□	TCGX16T3□□

Corresponding tool holders of insert VC□□ S-type clamping

SVQCR/L

KAPR:107°30'

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S16Q-SVQCR/L11	▲	▲	22	16	15	180	13	I60M2.5×6.5	WT07IP	---	---
S20R-SVQCR/L16	△	△	27	20	18	200	14	I60M3.5×8	WT15IP	---	---
S25S-SVQCR/L16	△	△	35	25	23	250	20	I60M3.5×12	WT15IP WH35L	V16BS	SM5×8.65XA
S32T-SVQCR/L16	△	△	40	32	30	300	22				

▲Stock available △Make-to-order

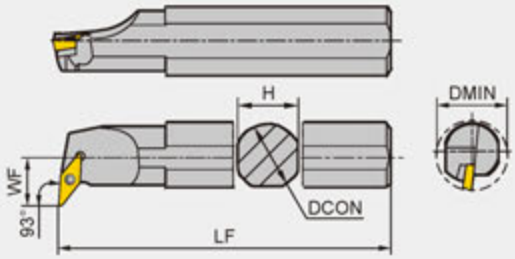
Applicable inserts

Application	For extra finishing	For finishing	For Al machining
Inserts shape	**SF**  A114	**XF**  A114	**LH**  A116
		NF  A114	**LC**  A116
		AHF  A114	
Tool holder type □□-SVQCR/L11	VC□□1103□□	VC□□1103□□	VCGX1103□□
□□-SVQCR/L16		VC□□1604□□	VCGX1604□□

Corresponding tool holders of insert VC□□ S-type clamping

SVUCR/L
KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S16Q-SVUCR/L11	△	△	24	16	15	180	15	I60M2.5×6.5	WT07IP	---	---
S20R-SVUCR/L11	△	△	28	20	18	200	17			---	---
S25S-SVUCR/L16	△	△	33	25	23	250	19	I60M3.5×12	WT15IP	---	---
S32T-SVUCR/L16	△	△	40	32	30	300	22			---	---

▲Stock available △Make-to-order

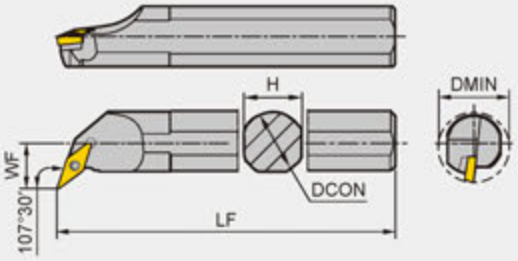
Applicable inserts

Application	For extra finishing	For finishing	For Al machining
Inserts shape	**SF**  A114	**XF**  A114	**LH**  A116
		NF  A114	**LC**  A116
		AHF  A114	
Tool holder type □□-SVUCR/L11	VC□□1103□□	VC□□1103□□	VCGX1103□□
□□-SVUCR/L16		VC□□1604□□	VCGX1604□□

Corresponding tool holders of insert VB□□ S-type clamping

SVQBR/L
KAPR:107°30'

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S20R-SVQBR/L16	△	△	27	20	18	200	14	I60M3.5×8	WT15IP	---	---
S25S-SVQBR/L16	△	△	35	25	23	250	20	I60M3.5×12	WT15IP WH35L	V16BS	SM5×8.65XA
S32T-SVQBR/L16	▲	▲	40	32	30	300	22				

▲Stock available △Make-to-order

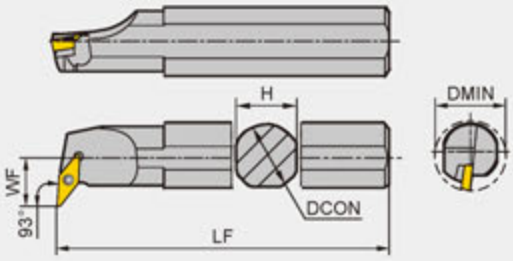
Applicable inserts

Application	For finishing	For semi-finishing	For roughing
Inserts shape	XF  A117	XM  A118	HR  A119
	EF  A117	HM  A119	SNR  A119
	NF  A118	EM  A118	
	NGF  A118		
	AHF  A118		
Tool holder type □□-SVQBR/L16	VB□□1604□□	VB□□1604□□	VB□□1604□□

Corresponding tool holders of insert VB□□ S-type clamping

SVUBR/L
KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S25S- SVUBR/L16	△	△	33	25	23	250	18	I60M3.5×12	WT15IP	---	---
S32T-SVUBR/L16	△	△	40	32	30	300	22		WT15IP WH35L	V16BS	SM5×8.65XA

※ Tool holder with cooling hole ▲Stock available △Make-to-order

Applicable inserts

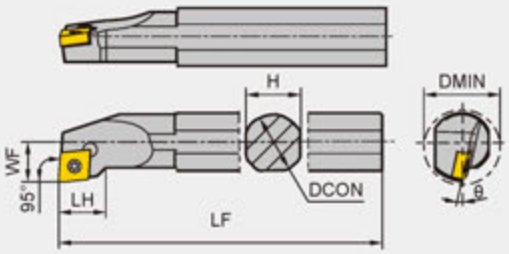
Application	For finishing	For semi-finishing	For roughing
Inserts shape	XF A117	XM A118	HR A119
	EF A117	HM A119	SNR A119
	NF A118	EM A118	
	NGF A118		
	AHF A118		
Tool holder type □□-SVUBR/L16	VB□□1604□□	VB□□1604□□	VB□□1604□□

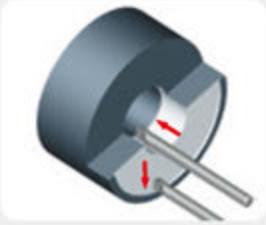
Corresponding tool holders of insert CP□□ S-type clamping

SCLPR/L

KAPR:95°

R-type shown





Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH			---	---
S10K-SCLPR/L06	▲	▲	12	10	9	125	6	-7°	17	I60M2.5×5.5	WT07IP	---	---
S12M-SCLPR/L06	▲	▲	16	12	11	150	8	-4°	20				
S16Q-SCLPR/L09	▲	▲	20	16	15	180	10	-4°	29	I60M3.5×8	WT15IP	---	---
S20R-SCLPR/L09	△	△	25	20	18	200	13	-4°	35				

▲Stock available △Make-to-order

Applicable inserts

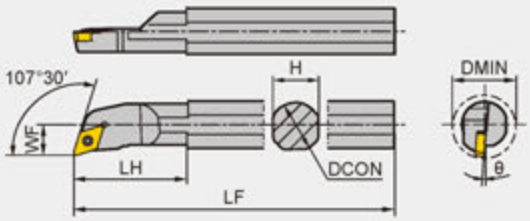
Application		For extra finishing
Inserts shape		SF  A120
Tool holder type	□□-SCLPR/L06	CP□□0602□□
	□□-SCLPR/L09	CP□□09T3□□

Corresponding tool holders of insert DP□□ S-type clamping

SDQPR/L

KAPR:107°30'

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH			---	---
S10K-SDQPR/L07	△	△	13	10	9	125	7	-8°	20	I60M2.5×5.5	WT07IP	---	---
S12M-SDQPR/L07	▲	△	16	12	11	150	9	-8°	22				
S16Q-SDQPR/L07	▲	△	20	16	15	180	11	-6°	27	I60M2.5×6.5			
S16Q-SDQPR/L11	▲	△	20	16	15	180	11	-6°	32	I60M3.5×8	WT15IP	---	---
S20R-SDQPR/L11	△	△	25	20	18	200	13	-6°	33				

▲Stock available △Make-to-order

Applicable inserts

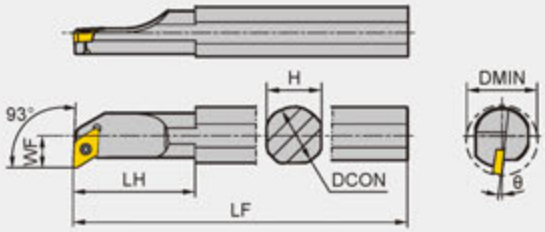
Application	For extra finishing
Inserts shape	SF  A120
Tool holder type □□-SDQPR/L07	DP□□0702□□
Tool holder type □□-SDQPR/L11	DP□□11T3□□

Corresponding tool holders of insert DP□□ S-type clamping

SDUPR/L

KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH			---	---
S10K-SDUPR/L07	▲	▲	15	10	9	125	9	-8°	18	I60M2.5×5.5	WT07IP	---	---
S12M-SDUPR/L07	▲	△	16	12	11	150	9	-8°	19				
S16Q-SDUPR/L07	△	△	20	16	15	180	11	-6°	25	I60M2.5×6.5			

▲Stock available △Make-to-order

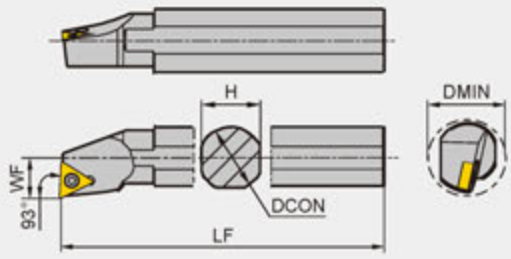
Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type □□-SDUPR/L07	DP□□0702□□

Corresponding tool holders of insert TP□□ S-type clamping

STUPR/L
KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF			---	---
S10M-STUPR/L09	△	△	13	10	9.4	150	6	I60M2.2×5.5	WT07IP	---	---
S10M-STUPR/L11	△	△	13	10	9.4	150	6				
S12Q-STUPR/L11	△	△	16	12	11.4	180	7.5	I60M2.5×6.5	WT07IP	---	---
S16R-STUPR/L11	△	△	20	16	15	200	10				

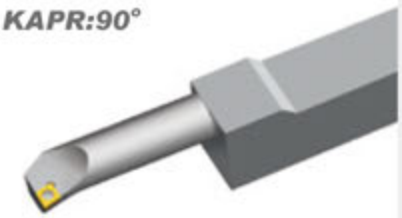
▲Stock available △Make-to-order

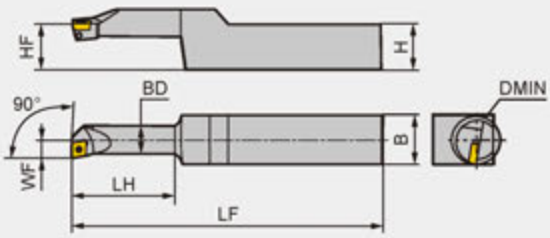
Applicable inserts

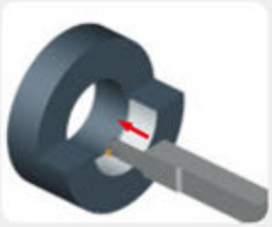
Application		For extra finishing
Inserts shape		SF  A122
Tool holder type	□□-STUPR/L09	TP□□0902□□
	□□-STUPR/L11	TP□□1103□□

Corresponding tool holders of insert CC□□ S-type clamping

SCFCR/L
KAPR:90°







Type	Stock		Basic dimensions(mm)								Screw	Wrench	---	---
	R	L	DMIN	BD	LF	WF	H	HF	B	LH			---	---
S10M-SCFCR/L06S25	▲	▲	13	10	150	7	27	27	25	35	I60M2.5×5.5	WT07IP	---	---
S12P -SCFCR/L06S25	▲	▲	16	12	170	9	27	27	25	35	I60M2.5×6.5			
S16Q-SCFCR/L09S25	▲	▲	20	16	180	11	27	27	25	50	I60M3.5×8	WT15IP	---	---
S20R-SCFCR/L09S25	△	△	25	20	200	13	27	27	25	50				
S25R-SCFCR/L12S25	△	△	32	25	200	17	27	27	25	75	I60M5×13	WT20IP	---	---

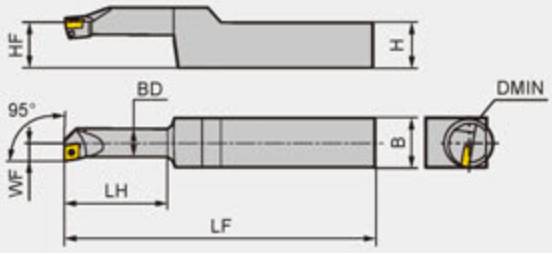
▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF  A95	XF  A95	XM  A96	HR  A98	TC  A98	LH  A99
		HF  A95	HM  A97			LC  A99
		EF  A96	EM  A97			
		AHF  A96	EG  A97			
Tool holder type □□-SCFCR/L06S25	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CCGX0602□□
□□-SCFCR/L09S25	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CCGX09T3□□
□□-SCFCR/L12S25		CC□□1204□□	CC□□1204□□	CC□□1204□□	CC□□1204□□	CCGX1204□□

Corresponding tool holders of insert CC□□ S-type clamping

SCLCR/L
KAPR:95°

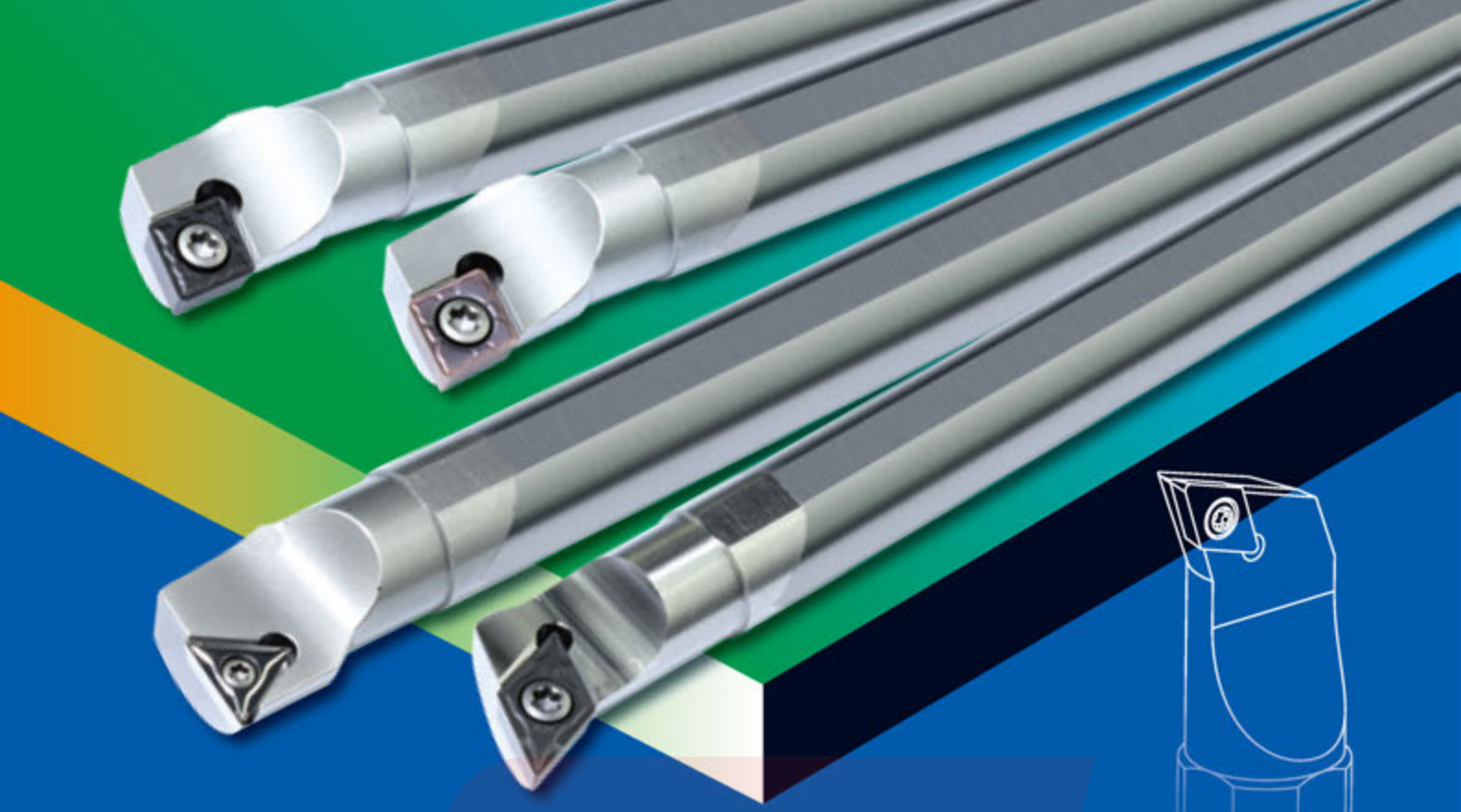


Type	Stock		Basic dimensions(mm)								Screw	Wrench	---	---
	R	L	DMIN	BD	LF	WF	H	HF	B	LH			---	---
S10M-SCLCR/L06S20	▲	▲	13	10	150	7	22	22	20	30	I60M2.5×5.5	WT07IP	---	---
S12P -SCLCR/L06S20	▲	▲	16	12	170	9	22	22	20	35				
S16Q-SCLCR/L09S20	▲	▲	20	16	180	11	22	22	20	40	I60M3.5×8	WT15IP	---	---
S20R-SCLCR/L09S20	△	△	25	20	200	13	22	22	20	45				

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF  A95	XF  A95	XM  A96	HR  A98	TC  A98	LH  A99
		HF  A95	HM  A97			LC  A99
		EF  A96	EM  A97			
		AHF  A96	EG  A97			
Tool holder type □□-SCLCR/L06S20	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CC□□0602□□	CCGX0602□□
Tool holder type □□-SCLCR/L09S20	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CC□□09T3□□	CCGX09T3□□



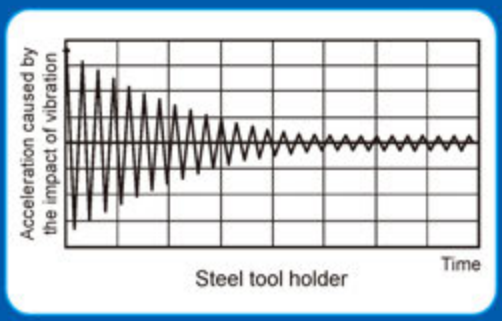
Damping tool holders for internal turning

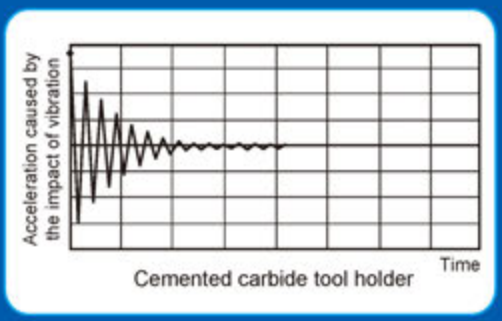
Technical features

Increasing material rigidity of tool holder can reduce the amplitude, or obtain larger overhang under the condition of same systemic stability. Therefore, compared with steel tool holder, cemented carbide tool holder has better dampening effect, smaller amplitude and reaches convergence point sooner. As for machining under the condition of long overhang and easy vibration, they can exert excellent performance and achieve higher dimensional accuracy and surface quality.

Under the same machining condition

The maximum overhang of cemented carbide tool holder can reach L≤6D, while the recommended maximum overhang of steel tool holder is L≤3D.



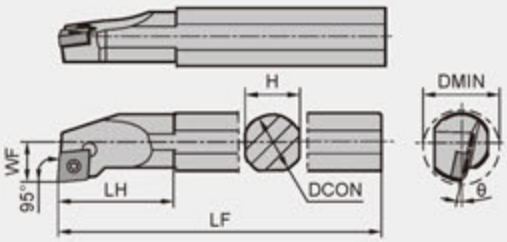


Corresponding tool holders of insert CP□□ (Damping tool holder) S-type clamping

SCLPR/L

KAPR:95°

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	--	--
	R	L	DMIN	DCON	WF	LF	LH	H	θ			--	--
C10M-SCLPR/L06	▲	△	12	10	6	150	17	9	-7°	I60M2.5×5.5	WT07IP	--	--
C12Q-SCLPR/L06	△	△	16	12	8	180	20	11	-4°				
C16R-SCLPR/L09	▲	△	20	16	10	200	29	15	-4°	I60M3.5×8	WT15IP	--	--
C20S-SCLPR/L09	△	△	25	20	13	250	35	18	-4°				

▲Stock available △Make-to-order

Applicable inserts

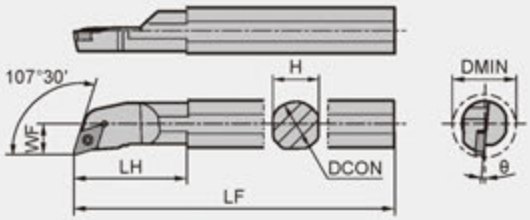
Application		For extra finishing
Inserts shape		SF  A120
Tool holder type	□□-SCLPR/L06	CP□□0602□□
	□□-SCLPR/L09	CP□□09T3□□

Corresponding tool holders of insert DP□□ (Damping tool holder) S-type clamping

SDQPR/L

KAPR:107°30'

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C10M-SDQPR/L07	▲	△	13	10	7	150	20	9	-8°	I60M2.5×5.5	WT07IP	---	---
C12Q-SDQPR/L07	△	△	16	12	9	180	22	11	-8°				
C16R-SDQPR/L07	△	△	20	16	11	200	27	15	-6°	I60M2.5×6.5			
C16R-SDQPR/L11	△	△	20	16	11	200	32	15	-6°	I60M3.5×8	WT15IP	---	---
C20S-SDQPR/L11	▲	△	25	20	13	250	33	18	-6°				

▲Stock available △Make-to-order

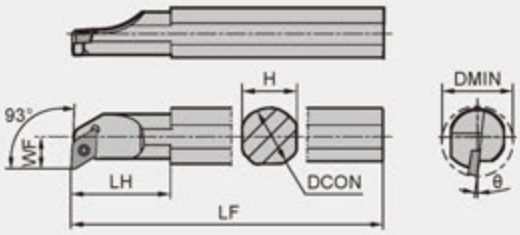
Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type □□-SDQPR/L07	DP□□0702□□
Tool holder type □□-SDQPR/L11	DP□□11T3□□

Corresponding tool holders of insert DP□□ (Damping tool holder) S-type clamping

SDUPR/L
KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C10M-SDUPR/L07	△	△	15	10	9	150	18	9	-8°	I60M2.5×5.5	WT07IP	---	---
C12Q-SDUPR/L07	△	△	16	12	9	180	19	11	-8°	I60M2.5×5.5		---	---
C16R-SDUPR/L07	△	△	20	16	11	200	25	15	-6°	I60M2.5×6.5		---	---

▲Stock available △Make-to-order

Applicable inserts

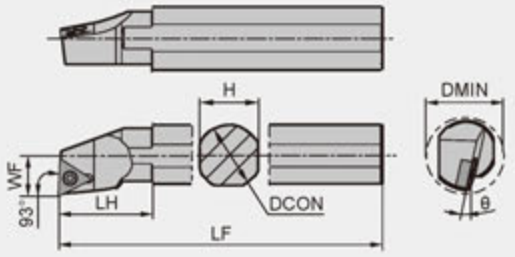
Application		For extra finishing
Inserts shape	**SF**	 A120
Tool holder type	**□□-SDUPR/L07**	DP□□0702□□

Corresponding tool holders of insert TP□□ (Damping tool holder) S-type clamping

STUPR/L

KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C10M-STUPR/L09	▲	△	12	10	6	150	20	9	-6°	I60M2.2×5.5	WT07IP	---	---
C12Q-STUPR/L09	▲	△	16	12	8	180	22	11	-4°				
C12Q-STUPR/L11	▲	△	16	12	8	180	25	11	-4°	I60M2.5×6.5	WT07IP	---	---
C16R-STUPR/L11	▲	△	20	16	10	200	27	15	-3°				

▲Stock available △Make-to-order

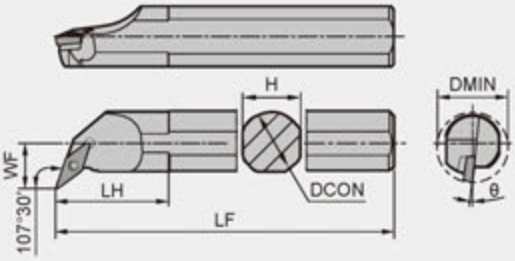
Applicable inserts

Application	For extra finishing
Inserts shape	SF  A122
Tool holder type: □□-STUPR/L09	TP□□0902□□
Tool holder type: □□-STUPR/L11	TP□□1103□□

Corresponding tool holders of insert VC□□ (Damping tool holder) S-type clamping

SVQCR/L
KAPR:107°30'

R-type shown

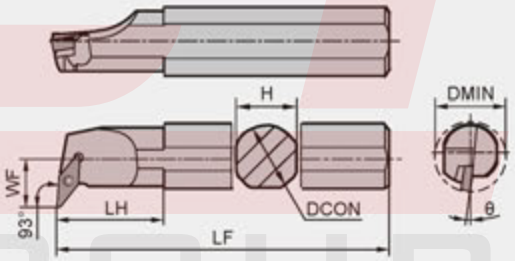


Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C16R-SVQCR/L11	△	△	22	16	13	200	28	15	-6°	I60M2.5×6.5	WT07IP	---	---
C20S-SVQCR/L11	△	△	26	20	15	250	32	18	-4°				

▲Stock available △Make-to-order

SVUCR/L
KAPR:93°

R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C16R-SVUCR/L11	△	△	24	16	15	200	25	15	-6°	I60M2.5×6.5	WT07IP	---	---
C20S-SVUCR/L11	△	△	28	20	17	250	30	18	-4°				

▲Stock available △Make-to-order

Applicable inserts

Application		For extra finishing	For Al machining
Inserts shape		SF  A114	LH  A116 LC  A116
Tool holder type	□□-SVQCR/L11	VC□□1103□□	VCGX1103□□
	□□-SVUCR/L11	VC□□1103□□	VCGX1103□□

Table of recommended cutting parameters for general turning

ISO	Materials		Hardness HB	CVD Coating			PVD Coating			Cermet	Coated cermet
				YBC152	YBC252	YBC352	YBG102	YBG202	YBG302	YNG151	YNG151C
				Feed rate (mm/rev)							
				0.1-0.6	0.1-0.8	0.2-1.0	0.2-0.4	0.1-0.6	0.05-0.8	0.05-0.2	0.05-0.2
				Cutting speed (m/min)							
P	Carbon steel	C=0.15%	125	500-270	480-240	430-220	460-220	380-180	360-165	550-350	580-350
		C=0.35%	150	460-250	460-230	350-200	440-210	300-170	280-150	500-300	520-300
		C=0.60%	200	400-220	400-200	310-180	380-180	260-150	240-130	460-260	480-260
	Alloy steel	Anneal	180	400-180	400-200	250-150	380-180	200-120	180-100	410-240	430-240
		Hardened	275	280-150	260-140	200-120	240-120	140-90	120-70	300-180	320-180
		Hardened	300	260-150	240-120	180-110	220-100	125-80	100-60	250-170	270-170
		Hardened	350	230-120	220-120	160-100	200-100	110-75	90-55	230-150	250-150
	High alloy steel	Anneal	200	360-190	310-170	220-130	290-150	175-100	155-80	350-200	370-200
		Hardene	325	190-130	150-100	140-90	130-80	85-60	65-40	170-110	190-110
	Cast steel	Non-Alloy	180	280-160	250-140	190-130	230-125	135-95	115-75	260-170	280-170
		Low alloy	200	280-110	220-110	170-130	200-90	120-100	100-80	260-170	280-170
		High alloy	225	210-110	190-100	150-110	170-80	95-55	95-55	260-100	280-100

ISO	Materials		Hardness HB	CVD Coating			PVD Coating				Cermet	Coated cermet
				YBM153	YBM251	YBM253	YBM215	YBG202	YBG205	YBG302	YNG151	YNG151C
				Feed rate (mm/rev)								
				0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.4	0.1-0.4	0.2-0.4	0.2-0.6	0.1-0.3	0.1-0.3
				Cutting speed (m/min)								
M	Stainless steel	Ferrite	180	280-180	250-140	260-140	290-190	300-190	290-190	250-150	330-220	350-210
		Austenite	260	250-150	200-110	210-110	240-160	250-160	240-160	220-120	250-150	270-140
		Martensite	330	200-140	210-130	220-130	250-170	260-170	250-170	210-120	270-170	290-160

Table of recommended cutting parameters for general turning

ISO	Materials		Hardness HB	CVD Coating			Cermet	Coated cermet	Nonmetallic ceramics
				YBD052	YBD102	YBD152	YNG151	YNG151C	CN3100
				Feed rate (mm/rev)					
				0.1-0.4	0.1-0.4	0.1-0.5	0.1-0.4	0.1-0.4	0.1-1.5
				Cutting speed (m/min)					
K	Malleable cast iron	Ferrolites	130	350-230	330-220	320-105	280-160	300-180	800-600
		Pearlyte	230	250-105	230-100	230-100	220-120	240-150	700-500
	Low grade cast iron		180	520-200	480-200	480-190	400-250	420-270	700-500
	High grade cast iron		260	230-120	220-115	210-100	360-240	380-260	800-600
	Ductile iron	Ferrolites	160	310-150	300-150	290-140	330-190	350-210	600-450
		Pearlyte	250	230-110	220-105	210-100	310-200	330-220	500-350

ISO	Materials		Hardness HB	PVD Coating					Cermet	CBN			PCD	Nonmetallic ceramics
				YBG102	YBG105	YBG202	YBS103	YBG212	YD101	YCB011	YCB012	YZB221	YCD011	CN3100
				Feed rate (mm/rev)										
				0.05-0.15	0.05-0.15	0.05-0.2	0.05-0.2	0.05-0.2	0.05-0.35	0.05-0.5	0.05-0.2	0.05-0.2	0.05-0.5	0.05-0.2
				Cutting speed (m/min)										
N	Aluminium alloy	Unheated	60						1750-800				<2500	
		Heat treatment	100						510-250				<2500	
	Cast aluminium alloy	Unheated	75						460-175				<2500	
		Heat treatment	90						300-110				<2500	
	Copper alloy	Lead alloy	110						610-205				630-65	
		Copper, red bronze	90						310-195				630-65	
		Copper, Lead-free copper, electrolytic copper	100						225-115				375-30	
S	Nickel-based alloy	Nickel-based alloy	40	90-30	90-40	90-30	90-20	90-30	70-20					150-260
H	Other material	Hard steel	45 HRC								350-225	350-225		
		Extra hard steel	50~60 HRC								250-135	250-135		
		Chilled cast iron	500							180-120				

Table of correctional cutting parameters of internal turning

Internal turning tools by P-type clamping

Workpiece material		Hardness HB	Machining category	L/D≤3		L/D=3-4 (Diameter of shank≥∅16mm)	
				Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)
P	Carbon steel, Alloy steel45#, 42CrMo	HB180—280	For semi-finishing	0.1-**0.25**-0.4	<5.0	0.1-**0.2**-0.3	<4.0
M	Carbon steel, Alloy steel 1Cr18Ni9Ti 0Cr18Ni9	≤HB220	For semi-finishing	0.1-**0.2**-0.3	<4.0	0.1-**0.15**-0.25	<3.0
K	Cast iron HT250	HB170—230	For semi-finishing	0.1-**0.25**-0.4	<5.0	0.1-**0.2**-0.3	<4.0

Internal turning tools by S-type clamping

Workpiece material		Hardness HB	Machining category	L/D≤3		L/D=4		L/D=5		L/D=6	
				Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)
P	Carbon steel, Alloy steel 45#, 42CrMo	HB180-280	For finishing	0.05-**0.1**-0.15	<0.2	0.05-**0.1**-0.15	<0.2				
			For semi-finishing	0.15-**0.25**-0.35	<3.0	0.1-**0.15**-0.2	<1.5				
M	Stainless steel 1Cr18Ni9Ti 0Cr18Ni9	≤HB220	For finishing	0.05-**0.1**-0.15	<0.2	0.05-**0.1**-0.15	<0.2				
			For semi-finishing	0.15-**0.2**-0.25	<2.0	0.1-**0.15**-0.2	<1.0				
N	Al alloy	---	For finishing	0.05-**0.1**-0.15	<0.2	0.05-**0.1**-0.15	<0.2	0.05-**0.1**-0.15	-0.15	0.05-**0.1**-0.15	<0.1
			For semi-finishing	0.05-**0.1**-0.15	<2.0	0.05-**0.1**-0.15	<1.5	0.05-**0.1**-0.15	-1.0	0.05-**0.1**-0.15	<1.0

Damping internal turning tools

Workpiece material		Machining conditions	Chipbreaker	Inserts material	Feed rate (mm/rev)	Cutting depth (mm)
P	Steel HB180-280	For finishing	SF	YNG151 YNG151C	0.05-**0.2**-0.35	0.05-**0.1-0.3**-0.5
M	Stainless steel ≤HB220				0.05-**0.2**-0.35	0.05-**0.1-0.3**-0.5
K	Cast iron HB170-230				0.05-**0.2**-0.35	0.05-**0.1-0.3**-0.5

Blue words are recommended cutting parameters.

Frequent problems of turning and solutions

Common problem		Cause \ Solutions	Tool material		Cutting conditions				Tool shape							Machine clamping system		
			Harder materials	Tougher materials	Cutting speed	Feed rate	Cutting depth	Cutting liquid	Change chipbreaker of inserts	Rake angle	Nose radius	Approach angle	Cutting edge strength	Increase precision of inserts	Increase rigidity of tool holder	Clamping of tool holder and workpiece	Overhang of tool holder	Power, gap
Over abrasion on nose	Bad precision during machining	Abrasion intensified on flank	✓								↑							
		Unsuitable cutting conditions			↓	↑												
Surface precision deterioration	Bad surface quality	Abrasion intensified and cutting edge not sharp enough	✓		↓			✓		↑	↑		↓	✓				
		Cutting edge breakage		✓		↓	↓		✓		↑		↑			✓	✓	✓
		Unsuitable geometrical shape of cutting edge							✓		↑		↓	✓				
		Unsuitable cutting conditions			↑	↓	↓	✓										
		Vibration		✓	↑↓	↓	↓	✓	✓	↑	↓	↑	↓		✓	✓	✓	✓
		Built-up edge			↑	↑		✓	✓	↑			↓	✓				
Radiation	Effect of cutting heat	Unsuitable cutting conditions			↓	↓	↓											
		Unsuitable geometrical shape of cutting edge	✓						✓	↑			↓					
Bad precision of dimensions	Dimensions fluctuate during cutting	Insert tolerance												✓				
		Offset of workpiece or tools							✓	↑	↓	↑			✓	✓	✓	✓
Breakage	Abrasion on flank and rake face	Abrasion on clearance face	✓		↓				✓	↑	↑		↓					
		Abrasion on rake face	✓		↓	↓	↓		✓	↑		↓						
	Edge chipping	Vibration and impact		✓		↓	↓		✓			↓	↑		✓	✓	✓	✓
	Built-up edge	Unsuitable workpiece hardness for cutting conditions			↑	↑		✓	✓	↑			↓	✓				
	Thermal cracking	Hardness of workpiece material and tool material unsuitable for cutting conditions			↓	↓	↓	✓	✓	↑			↓					
	Cutting edge nose deformation	Occurring during intermittent machining with high feed rate	✓		↑	↓	↓	✓	✓	↑	↑	↓	↓					
	Tool life	Unsuitable materials and cutting conditions		✓		↓	↓		✓		↑	↓	↑		✓	✓	✓	✓
Chip controlling	Long, unbroken and snarled chips	Unsuitable cutting condition			↓	↑	↑	✓										
		Unsuitable geometry							✓		↓	↑						
	Too short and hard chips	Unsuitable cutting condition				↓	↓	✓										
		Unsuitable geometrical shape of cutting edge							✓		↑	↓						
Burr and knockdown flange	Steel and Al, burrs occurring	Unsuitable cutting condition			↑	↓		✓										
		Tool abrasion and unsuitable geometrical shape	✓						✓	↑	↓	↑	↓					
	Edge break out on cast iron	Unsuitable cutting conditions			↓	↑		✓										
		Tool abrasion and unsuitable geometrical shape	✓						✓	✓	↓	↓	↓					
	Heavy burr on soft steel	Unsuitable cutting condition				↓	↓											
		Tool abrasion and unsuitable geometrical shape	✓						✓	↑	↑		↑		✓	✓	✓	✓

Abrasion of tools and various damages

Tool damage type	Phenomenon	Cause	Solution
Flank wear	Cutting resistant force increasing Groove wear on flank	Tool material is too soft. Cutting speed is too high. Clearance angle is too small. Feed rate is too low.	◆Select tool materials with good wear resistance. ◆Reduce cutting speed. ◆Enlarge clearance angle. ◆Increase feed rate.
Rake face wear (Crater wear)	Bad chip controlling Surface quality deterioration	Tool material is too soft. Cutting speed is too hig. Feed rate is too high.	◆Select tool materials with good wear resistance. ◆Reduce cutting speed. ◆Reduce feed rate.
Cutting edge breakage	Occasional breakage Instability of tool life	Tool material is too hard. Feed rate is high. Cutting edge strength is not high enough. Rigidity of tool holder and tool bar is small.	◆Select tool materials with good toughness. ◆Reduce feed rate. ◆Increase land width (if rounding changes into chamfering). ◆Enlarge tool bar size.
Breakage	Cutting resistant force increasing Deterioration of surface roughness	Tool material is too hard. Feed rate is high. Cutting edge strength is not high enough. Rigidity of tool holder and tool bar is low.	◆Select tool materials with good toughness. ◆Reduce feed rate. ◆Increase land width (if rounding changes into chamfering). ◆Enlarge tool bar size.
Plastic deformation (Cutting edge collapse)	Workpiece dimensions change Nose abrasion	Tool material is too soft. Cutting speed is too high. Cutting depth and feed rate are too high. Cutting edge temperature is too high.	◆Select tool material with good wear resistance ◆Reduce cutting speed. ◆Reduce cutting depth and feed rate. ◆Select tool materials with good heat conductivity.
Built-up edge (Bonding)	Surface quality deterioration during finishing Cutting resistant force increasing	Cutting speed is low. Cutting edge is not sharp enough. Tool material is unsuitable.	◆Increase cutting speed. ◆Enlarge rake angle. ◆Select tool materials that are not easy to adhere together (coating, cermet, etc.)
Thermal cracking	Damage because of thermal circulation Normally occurring during intermittent machining	Premature edge failure due to thermal cracks. Tool material is too hard.	◆Adopt dry cutting. ◆Select tool materials with good toughness.
Chattering	burrs occurring Cutting resistant force increasing	Feed rate and cutting speed are too high.	◆Select tool materials with good wear resistance. ◆Sharpen cutting edge by enlarging rake angle. ◆Reduce cutting speed.
Flaking	Usually occurring when machining super hard materials, which is accompanied with vibration	Bonding occurs on cutting edge. Chip flow is obstructed.	◆Sharpen cutting edge by enlarging rake angle. ◆Enlarge chip pocket.