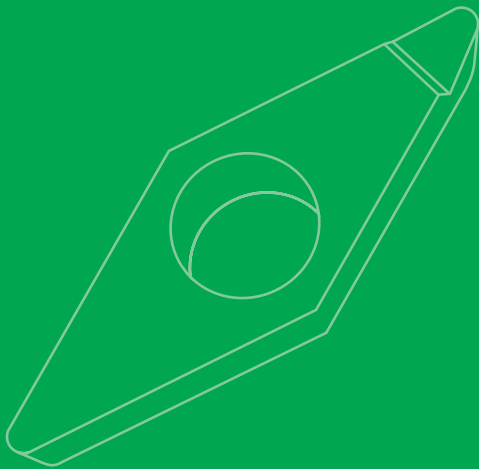
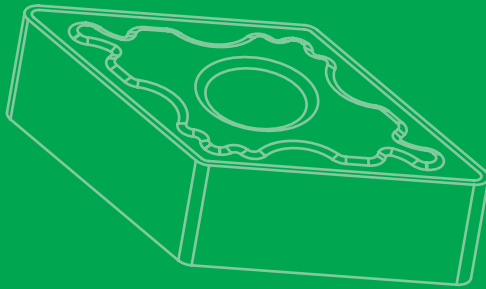




TURNING / ceramic



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS








DRILLS

SPARE PARTS

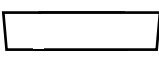
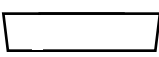
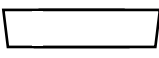
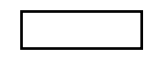
INDEX

C	N	G	A	12	04	08
1	2	3	4	5	6	7



1 Geometry

C		80
D		55
R		360
S		90
T		60
V		35
W		80

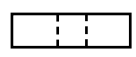



2 Clearance Angle

B		5°
C		7°
P		11°
N		0°








3 Tolerance

		
G	±0,025	±0,13
M	±0,05 ±0,15	±0,13
U	±0,08 ±0,25	±0,13

4 Shape

A	
G	
M	
T	
X	Special

5 Shape (mm)

C	06 09 12 16 19 25	
D	07 11 15	
R	06 09 12 15 19 25	
S	09 12 15 19 25	
T	09 11 16 22	
V	11 16 22	
W	06 08	

6 Thickness (mm)

02	2,38
03	3,18
T3	3,97
04	4,76
06	6,35
07	7,94
09	9,52
10	10,00

7 Corner Radius

02	0,20 mm
04	0,40 mm
08	0,80 mm
12	1,20 mm
16	1,60 mm
24	2,40 mm

T	04	00	0	KS	81	50
8	9	10	11	12	13	14

8 Chamfer

T	Mono 20° Chamfer
K	Mono 30° Chamfer
D	Double 10° Chamfer
S	Double 15° Chamfer
AD	After Double 10° Chamfer
AS	After Double 15° Chamfer

9 Chamfer Width 1

01	0,05 mm
02	0,10 mm
03	0,15 mm
04	0,20 mm
05	1,00 mm
06	2,00 mm
10	1,20 mm
20	1,50 mm
30	0,75 mm
40	1,25 mm

10 Cf Width 2 x Degree

00	Mono type
01	0,20 x 25
02	0,10 x 30
03	0,20 x 30
04	0,15 x 30
05	0,45 x 25

11 Honing (µm)

0	No Honing
1	10
2	20
3	30
5	50

12 Grade

KS	$Al_2O_3 + TiC(N)$
KSC	$Al_2O_3 + TiC(N) + TiN$
KZ	$Al_2O_3 + ZrO_2$
KN	Si_3N_4
KA	$TiC + Al_2O_3$
KL	SiAlON
KW	Whisker

13 Workpiece

41	Cast Iron
71	Inconel & High Temp. Alloy
81	Hardened Steel

14 Application

10	
20	
30	
40	
50	
60	
70	

- TURNING
- GROOVING
- THREADING
- MILLING
- DRILLING
- ENDMILLS
- DRILLS
- SPARE PARTS
- INDEX

Grades

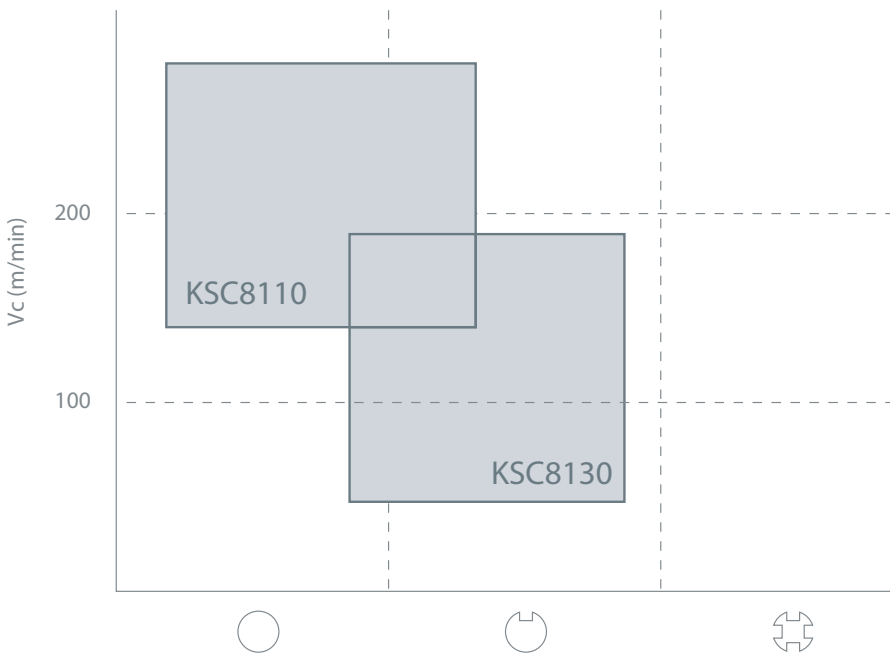
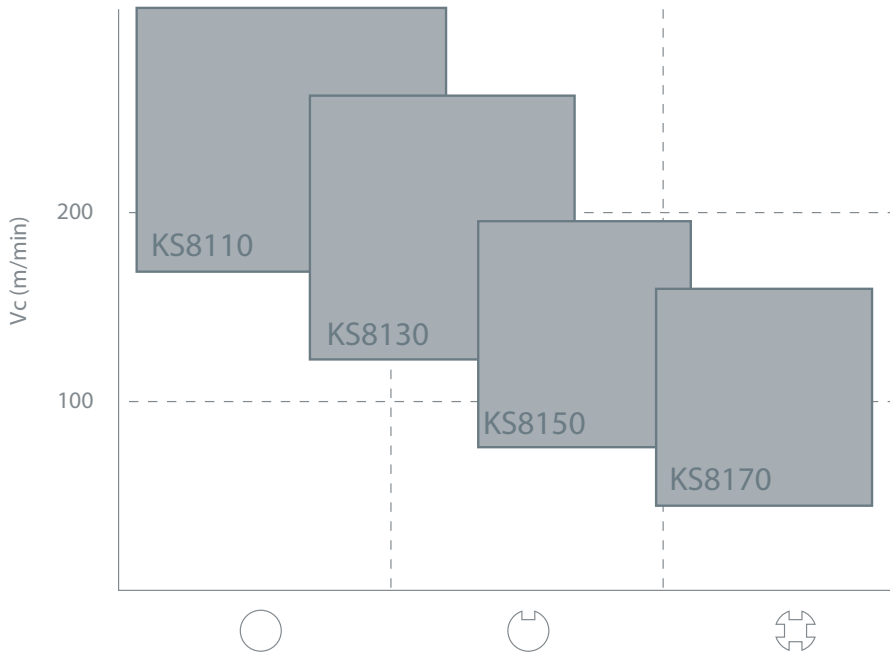
ISO DIN 513	K					H					S				
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40
AL ₂ O ₃ + TiC(N)						KS8110									
						KS8130									
						KS8150									
						KS8170									
AL ₂ O ₃ + TiC(N) PVD						KSC8110									
						KSC8130									
AL ₂ O ₃ + ZrO ₂	KZ4120														
	KZ4130														
Si ₃ N ₄	KN4110														
	KN4120														
	KN4130														
	KN4140														
	KN4150														
TiC + AL ₂ O ₃	KA4110														
SiAlON											KL7110				
											KL7120				
Whisker											KW7110				
											KW7120				

COATED

TURNING

Range ISO **H**

Grades



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

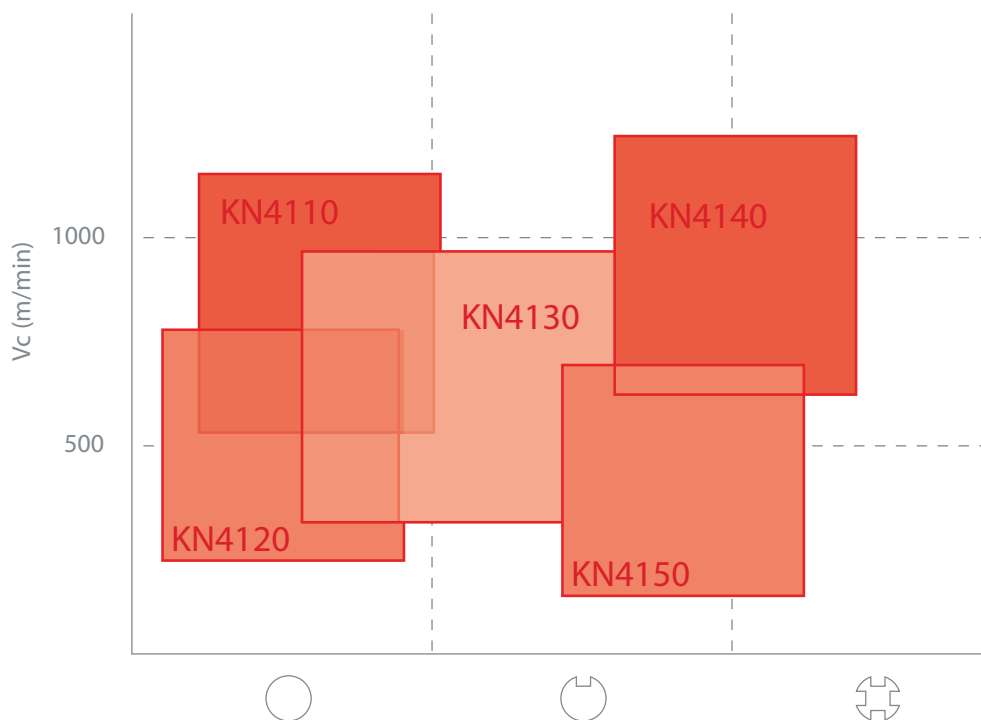
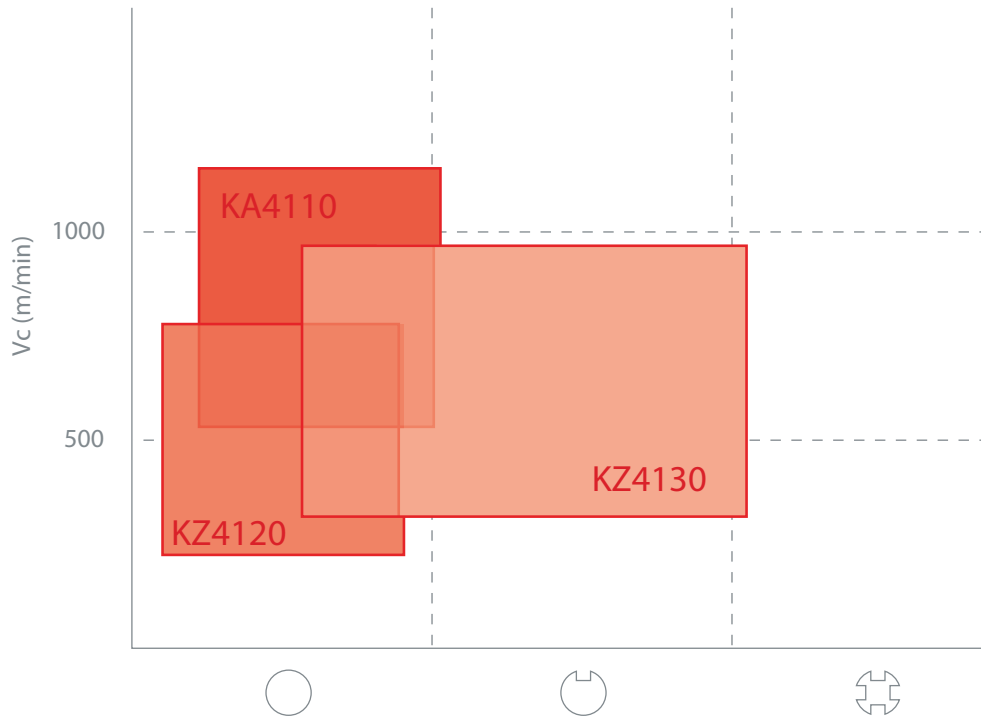
DRILLS

SPARE PARTS

INDEX

Range ISO **K**

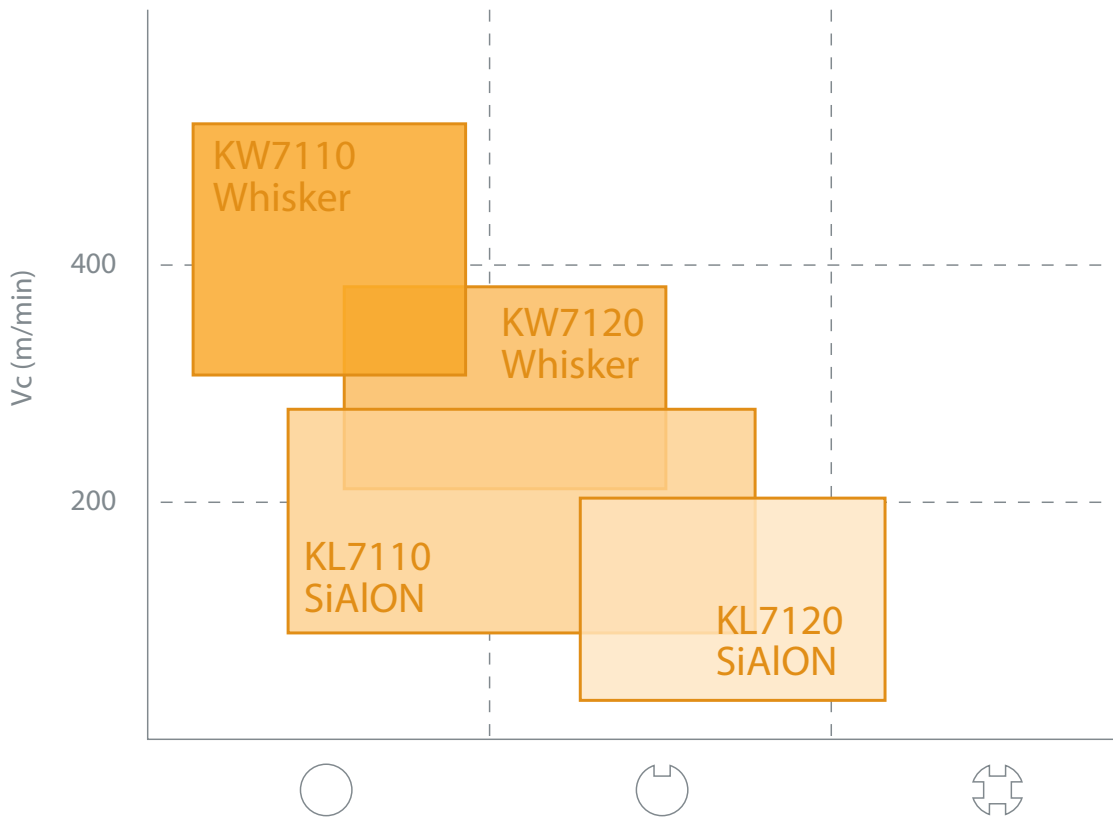
Grades



TURNING

Range ISO **S**

Grades



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

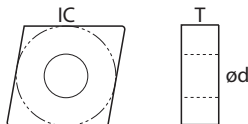
DRILLS

SPARE PARTS

INDEX

NEGATIVE with hole

CN□□



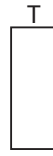
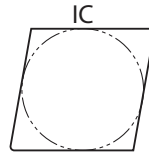
CN □□	1204 □□	1606 □□	1906 □□
IC	12,7	15,875	19,05
T	4,76	6,35	6,35
ød	5,16	6,35	7,93
Holder	131	131	131

DESCRIPTION	IC	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker			
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120
	CNGA120404	T04000	•	•	•		•	•											
	CNGA120408	T04000	•	•	•		•	•											
	CNGA120412	T04000	•	•	•		•	•											
	CNGA160612	T04000	•	•	•		•	•											
CNGA160616	T04000	•	•	•		•	•												
	CNGA120404	T04002	•	•	•		•	•											
	CNGA120408	T04002	•	•	•		•	•											
	CNGA120412	T04002	•	•	•		•	•											
	CNGA120416	T04002	•	•	•		•	•											
	CNGA160612	T04002	•	•	•		•	•											
	CNGA160616	T04002	•	•	•		•	•											
	CNGA190616	T04002	•	•	•		•	•											
	CNGA160612	S20022	•	•	•		•	•											
	CNGA160616	S20022	•	•	•		•	•											
CNGA190616	S20022	•	•	•		•	•												

TURNING

NEGATIVE
without hole

CN□□



CN □□	1204 □□	1207 □□
IC	12,7	12,7
T	4,76	7,94
Ød	-	-
Holder		

DESCRIPTION	Image	T	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110
	CNGN120408	T04000																	•
	CNGN120412	T04000																	•
	CNGN120708	T04000																	•
	CNGN120712	T04000																	•
	CNGN120408	T04002		•	•							•	•					•	
	CNGN120412	T04002		•	•							•	•					•	
	CNGN120416	T04002		•	•							•	•					•	
	CNGN120708	T04002		•	•							•	•					•	
	CNGN120712	T04002		•	•							•	•					•	
	CNGN120716	T04002		•	•							•	•					•	
	CNMX120712	T04000										•	•		•	•			
	CNMX120716	T04000										•	•		•	•			
	CNMX120712	T04002										•	•		•	•			
	CNMX120716	T04002										•	•		•	•			

- TURNING
- GROOVING
- THREADING
- MILLING
- DRILLING
- ENDMILLS
- DRILLS
- SPARE PARTS
- INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

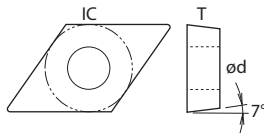
DRILLS

SPARE PARTS

INDEX

NEGATIVE
with hole

DN□□



DN □□	1504 □□	1506 □□	1507 □□
IC	12,7	12,7	12,7
T	4,76	6,35	7,94
ød	5,16	5,16	5,16
Holder		148	

DESCRIPTION	T04000	Al ₂ O ₃ + TiC(N)		+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker					
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120
	DNGA150404	•	•		•														
	DNGA150408	•	•	•	•		•			•	•	•						•	•
	DNGA150412	•	•	•	•						•	•	•			•		•	•
	DNGA150604	•	•	•	•														
	DNGA150608	•	•	•	•				•	•	•	•			•				
	DNGA150612	•	•	•	•						•	•	•		•				
	DNGA150616	•	•	•							•	•	•						
	DNGA150704	•	•																
	DNGA150708	•	•							•	•	•	•						
	DNGA150712	•	•							•		•	•	•		•			
	DNGA150404	•	•		•														
	DNGA150408	•	•	•	•		•			•	•	•						•	•
	DNGA150412	•	•	•	•						•	•	•			•		•	•
	DNGA150604	•	•	•	•														
	DNGA150608	•	•	•	•					•	•	•	•		•				
	DNGA150612	•	•	•	•						•	•	•		•				
	DNGA150616	•	•	•							•	•	•						
	DNGA150704	•	•																
	DNGA150708	•	•							•	•	•	•						
	DNGA150712	•	•							•		•	•	•		•			

Vc • fn • ap

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TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

POSITIVE 7°
without hole

RC □ □



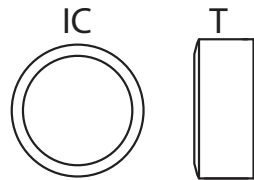
RC □ □	0606 □ □	0607 □ □	0907 □ □	1207 □ □	1510 □ □	1910 □ □
IC	6,35	6,35	9,525	12,70	15,87	19,05
T	6,35	7,94	7,94	7,94	10,00	10,00
Ød	-	-	-	-	-	-
Holder	156	156	156	156	156	156

DESCRIPTION	IC	Al ₂ O ₃ + TiC(N)				+ PVD	ZrO ₂		Si ₃ N ₄				SiAlON		Whisker					
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120	
	RCGX 060600	T04000	•	•	•		•	•										•	•	
	RCGX 060700	T04000	•	•	•		•	•											•	•
	RCGX 090700	T04000	•	•	•		•	•											•	•
	RCGX 120700	T04000	•	•	•		•	•											•	•
	RCGX 151000	T04000	•	•	•		•	•											•	•
	RCGX 191000	T04000	•	•	•		•	•											•	•
	RCGX 251200	T04000	•	•	•		•	•											•	•
	RCGX 060600	S20022	•	•	•		•	•											•	•
	RCGX 060700	S20022	•	•	•		•	•											•	•
	RCGX 090700	S20022	•	•	•		•	•											•	•
	RCGX 120700	S20022	•	•	•		•	•											•	•
	RCGX 151000	S20022	•	•	•		•	•											•	•
	RCGX 191000	S20022	•	•	•		•	•											•	•
	RCGX 251200	S20022	•	•	•		•	•											•	•
	RCGX 060600	S06032	•	•	•		•	•											•	•
	RCGX 060700	S06032	•	•	•		•	•											•	•
	RCGX 090700	S06032	•	•	•		•	•											•	•
	RCGX 120700	S06032	•	•	•		•	•											•	•
	RCGX 151000	S06032	•	•	•		•	•											•	•
	RCGX 191000	S06032	•	•	•		•	•											•	•
	RCGX 251200	S06032	•	•	•		•	•											•	•
	RCGX 060600	AS06032	•	•	•		•	•											•	•
	RCGX 060700	AS06032	•	•	•		•	•											•	•
	RCGX 090700	AS06032	•	•	•		•	•											•	•
	RCGX 120700	AS06032	•	•	•		•	•											•	•
	RCGX 151000	AS06032	•	•	•		•	•											•	•
	RCGX 191000	AS06032	•	•	•		•	•											•	•
	RCGX 251200	AS06032	•	•	•		•	•											•	•

TURNING

NEGATIVE
without hole

RN□□



RN □□	1204 □□	1207 □□	1907 □□
IC	12,70	12,70	19,05
T	4,76	7,94	7,94
∅d	-	-	-

DESCRIPTION	Image	Code	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110
	RNGN 120400	T04000	•	•	•													•	•
	RNGN 120700	T04000	•	•	•													•	•
	RNGN 190700	T04000	•	•	•													•	•
	RNGN 120400	S20022	•	•	•													•	•
	RNGN 120700	S20022	•	•	•													•	•
	RNGN 190700	S20022	•	•	•													•	•
	RNGN 120400	S06032	•	•	•													•	•
	RNGN 120700	S06032	•	•	•													•	•
	RNGN 190700	S06032	•	•	•													•	•
	RNGN 120400	AS20022	•	•	•													•	•
	RNGN 120700	AS20022	•	•	•													•	•
	RNGN 190700	AS20022	•	•	•													•	•
	RNGN 120400	AS06032	•	•	•													•	•
	RNGN 120700	AS06032	•	•	•													•	•
	RNGN 190700	AS06032	•	•	•													•	•

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

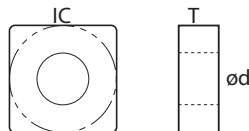
DRILLS

SPARE PARTS

INDEX

NEGATIVE
with hole

SN □ □



SN □ □	0904 □ □	1204 □ □	1207 □ □
IC	9,52	12,70	12,70
T	4,76	4,76	7,94
ød	3,81	5,16	5,16
Holder	162	162	

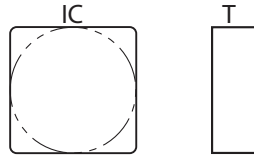
DESCRIPTION	IC	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker				
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120	
	SNGA090304	T04000	•	•																
	SNGA090308	T04000	•	•																
	SNGA120404	T04000	•		•					•					•					
	SNGA120408	T04000	•	•	•	•				•	•		•		•			•	•	
	SNGA120412	T04000	•	•	•	•			•		•	•			•	•	•			
	SNGA120416	T04000									•				•	•	•			
	SNGA120708	T04000	•																	
	SNGA120712	T04000	•								•	•								
	SNGA120716	T04000	•						•		•	•						•		
	SNGA120412	S20022	•	•	•	•		•		•	•	•		•	•	•				
	SNGA120416	S20022								•				•	•	•				
	SNGA120708	S20022	•																	
	SNGA120712	S20022	•								•	•								
	SNGA120716	S20022	•						•		•	•					•			

Vc • fn • ap ▶ 115

TURNING

NEGATIVE
without hole

SN □□



SN □□	0904 □□	1204 □□	1207 □□
IC	9,52	12,70	12,70
T	4,76	4,76	7,94
Ød	3,81	5,16	5,16
Holder	-	-	162

DESCRIPTION	Image	T	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110
[Image]	SNGN090304	T04000	•	•															
	SNGN090308	T04000	•	•															
	SNGN090312	T04000	•		•					•					•				
	SNGN120408	T04000	•	•	•	•				•	•		•		•			•	•
	SNGN120412	T04000	•	•	•	•			•		•	•	•		•	•	•		
	SNGN120416	T04000									•				•	•	•		
	SNGN120708	T04000	•																
	SNGN120712	T04000	•								•	•							
	SNGN120716	T04000	•						•		•	•						•	
[Image]	SNGN120412	S20022	•	•	•	•			•		•	•			•	•	•		
	SNGN120416	S20022									•				•	•	•		
	SNGN120708	S20022	•																
	SNGN120712	S20022	•								•	•							
	SNGN120716	S20022	•						•		•	•						•	
[Image]	SNGX120708	T04000	•								•		•						
	SNGX120712	T04000	•	•							•	•	•			•			
	SNGX120716	T04000									•	•	•	•		•			
[Image]	SNGX120708	T04002	•								•		•						
	SNGX120712	T04002	•	•							•	•	•			•			
	SNGX120716	T04002									•	•	•	•		•			

- TURNING
- GROOVING
- THREADING
- MILLING
- DRILLING
- ENDMILLS
- DRILLS
- SPARE PARTS
- INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

NEGATIVE
with hole

TN □ □



TN □ □	1604 □ □	2204 □ □	2706 □ □
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
ød	3,81	5,16	6,35
Holder	178	178	-

DESCRIPTION	IC	Al ₂ O ₃ + TiC(N)		+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker					
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120
	TNGA160404	T04000	•	•				•		•				•					
	TNGA160408	T04000	•	•	•	•		•		•	•	•		•					
	TNGA160412	T04000	•	•	•	•				•	•	•						•	•
	TNGA160416	T04000	•	•	•	•				•	•	•							
	TNGA220408	T04000		•	•					•		•				•		•	•
	TNGA220412	T04000		•	•					•		•				•		•	•
	TNGA270608	T04000	•	•															
	TNGA270612	T04000	•	•															
	TNGA270616	T04000		•												•			
	TNGA160404	T04002	•	•				•		•				•					
	TNGA160408	T04002	•	•	•	•		•		•	•	•		•	•				
	TNGA160412	T04002	•	•	•	•				•	•	•					•	•	
	TNGA160416	T04002	•	•	•	•				•	•	•							
	TNGA220408	T04002		•	•					•		•				•		•	•
	TNGA220412	T04002		•	•					•		•				•		•	•
	TNGA270608	T04002	•	•															
	TNGA270612	T04002	•	•															
TNGA270616	T04002		•												•				

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TURNING

NEGATIVE
without hole

TN □□



TN □□	1604 □□	2204 □□	2706 □□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
Ød	-	-	-
Holder			

DESCRIPTION	Image	T	Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110
	TNGN160404	T04000	•	•				•		•				•					
	TNGN160408	T04000	•	•	•	•		•		•	•	•		•	•				
	TNGN160412	T04000	•	•	•	•				•	•	•						•	•
	TNGN160416	T04000	•	•	•	•				•	•	•							
	TNGN220408	T04000		•	•						•	•				•		•	•
	TNGN220412	T04000		•	•						•	•				•		•	•
	TNGN270608	T04000	•	•															
	TNGN270612	T04000	•	•															
	TNGN270616	T04000		•												•			
	TNGN160404	T04002	•	•					•		•				•				
	TNGN160408	T04002	•	•	•	•		•		•	•	•		•	•				
	TNGN160412	T04002	•	•	•	•				•	•	•						•	•
	TNGN160416	T04002	•	•	•	•				•	•	•							
	TNGN220408	T04002		•	•						•	•				•		•	•
	TNGN220412	T04002		•	•						•	•				•		•	•
	TNGN270608	T04002	•	•															
	TNGN270612	T04002	•	•															
	TNGN270616	T04002		•												•			

- TURNING
- GROOVING
- THREADING
- MILLING
- DRILLING
- ENDMILLS
- DRILLS
- SPARE PARTS
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TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

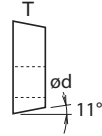
DRILLS

SPARE PARTS

INDEX

POSITIVE 11°
without hole

TP □□



TP □□	1103□□	1603□□
IC	6,35	9,525
T	3,18	3,18
ød	-	-
Holder		

DESCRIPTION	T04000	Al ₂ O ₃ + TiC(N)		+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker					
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120
	TPGN110304	•	•						•	•			•						
	TPGN110308	•	•						•	•	•			•				•	•
	TPGN160304	•	•	•				•	•		•			•					
	TPGN160308	•	•					•	•	•	•	•		•				•	•
	TPGN160312	•	•								•	•						•	•
	TPGN160404	•		•															
	TPGN160408	•	•													•			
	TPGN160412	•														•			
	TPGN220404	•	•																
	TPGN220408	•	•								•							•	•
	TPGN220412	•	•									•	•						
	TPGN220416	•	•	•															
	TPGN110304	•	•								•	•			•				
	TPGN110308	•	•								•	•	•		•			•	•
	TPGN160304	•	•	•				•	•		•			•					
	TPGN160308	•	•					•	•	•	•	•		•				•	•
	TPGN160312	•	•								•	•						•	•
	TPGN160404	•		•															
	TPGN160408	•	•													•			
	TPGN160412	•														•			
	TPGN220404	•	•																
	TPGN220408	•	•									•						•	•
	TPGN220412	•	•									•	•						
	TPGN220416	•	•	•															

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TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

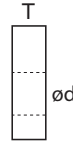
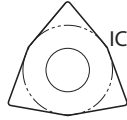
DRILLS

SPARE PARTS

INDEX

NEGATIVE
with hole

WN□□



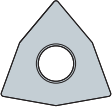
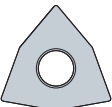
WN □□ 0804□□

IC 12,7

T 4,76

ød 5,16

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DESCRIPTION	IC	Al ₂ O ₃ + TiC(N)			+ PVD		ZrO ₂		Si ₃ N ₄				SiAlON		Whisker				
		KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110	KL7110	KL7120	KW7110	KW7120
 WNGA080404 T04000 WNGA080408 T04000 WNGA080412 T04000	•	•	•																
	•	•	•						•	•	•	•	•		•			•	•
	•	•	•						•	•	•	•	•		•				
 WNGA080404 T04002 WNGA080408 T04002 WNGA080412 T04002	•	•	•																
	•	•	•						•	•	•	•	•		•			•	•
	•	•	•						•	•	•	•	•		•				

Vc • fn • ap

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TURNING

Cutting Parameters

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL

KG	GREY CAST IRON
KN	NOCULAR CAST IRON
SA	SUPER ALLOYS (Ni Based)

MATERIAL	ap (mm)	fn (mm/rev)	CUTTING CONDITION		Al ₂ O ₃ + TiC(N)				+ PVD		SiAlON		Whisker		
					KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KL7110	KL7120	KW7110	KW7120	
H	HH	0,10~0,50	0,05~0,20	○	∅	130~250	120~240	110~230	100~220	100~220	120~240				
		0,50~2,00	0,10~0,30	○	∅	110~180	100~170	90~160	80~150	80~160	100~180				
	HC	0,10~0,50	0,05~0,20	○	∅	110~210	100~200	90~190	80~180	80~180	100~200				
		0,50~2,00	0,10~0,30	○	∅	90~150	80~140	70~130	60~120	60~120	80~140				
	HB	0,10~0,50	0,05~0,20	○	∅	110~230	100~220	90~210	80~200	80~200	100~220				
		0,50~2,00	0,10~0,30	○	∅	80~160	70~150	60~140	60~140	60~140	80~160				
K	KG	0,20~0,50	0,10~0,30	○	∅			300~700							
				⊕	∅										
		○	∅												
	KN	1,00~4,00	0,25~0,50	⊕	∅										
				○	∅			300~600							
		○	∅								250~500				
SA	0,50~1,00	0,10~0,30	○	∅							200~350		250~500		
			⊕	∅							180~300	150~280	200~350	200~350	
	○	∅								150~250		200~400			
1,00~4,00	0,15~0,40	⊕	∅							140~240	120~220				

- TURNING
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- DRILLING
- ENDMILLS
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Cutting Parameters

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL

KG	GREY CAST IRON
KN	NOCULAR CAST IRON
SA	SUPER ALLOYS (Ni Based)

MATERIAL	ap (mm)	fn (mm/rev)	CUTTING CONDITION	ZrO ₂		Si ₃ N ₄							
				KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110		
H	HH	0,10~0,50	0,05~0,20	○	∅								
		0,50~2,00	0,10~0,30	○	∅								
	HC	0,10~0,50	0,05~0,20	○	∅								
		0,50~2,00	0,10~0,30	○	∅								
	HB	0,10~0,50	0,05~0,20	○	∅								
		0,50~2,00	0,10~0,30	○	∅								
K	KG	0,20~0,50	0,10~0,30	○	∅	350~750	400~800	650~1200	600~1200	600~1200	500~1000		
				⊕	∅			550~1100	500~1000	500~1000	450~800		
		○	∅			650~1200	600~1200	600~1200	500~1000	450~800			
	KN	1,00~4,00	0,25~0,50	⊕	∅			550~1100	500~1000	500~1000	450~800	400~600	
				○	∅			450~800	400~800	400~800	350~700		450~800
		○	∅			350~650	300~600	300~600	250~500		400~600		
SA	0,50~1,00	0,10~0,30	○	∅			450~900	400~800	400~800	350~700			
			⊕	∅			450~900	400~800	400~800	350~700			
	○	∅			300~600	300~600	300~600	250~500					
S	0,50~1,00	0,10~0,30	○	∅									
			⊕	∅									
	○	∅											
1,00~4,00	0,15~0,40	○	∅										
		⊕	∅										