



KS6030/KS6040

SiAlON Ceramic or Heat-Resistant Alloy



Longer tool life and stable machining of heat-resistant alloy

SiAlON ceramic grades maintain excellent wear and fracture resistance

KS6030 - High wear resistance for finishing to medium turning operations

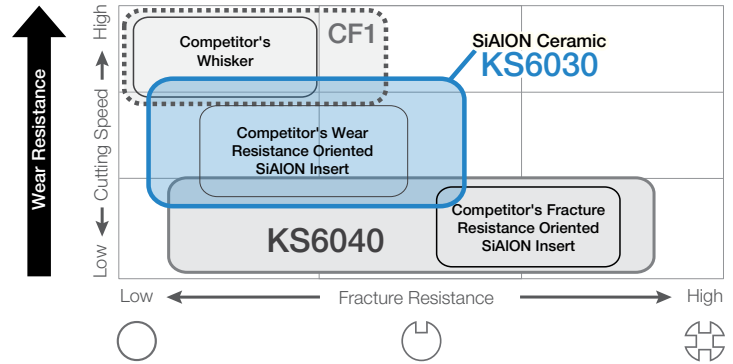
KS6040 - High fracture resistance for roughing

KS6030/KS640

SiAlON ceramic grades maintain excellent wear resistance and fracture resistance

KS6030

- Superior wear resistance with high chemical stability
- Perfect for semi-finishing and profiling at medium to high cutting speeds
- Prevents burr formation and chipping due to superior notch wear resistance
- Available for milling applications as well



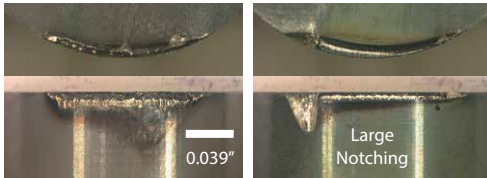
Wear Resistance Comparison

TURNING

Cutting Conditions
Workpiece Material : Ni-Base Heat Resistant Alloy
Vc = 980sfm f = 0.008ipr D.O.C. = 0.079"
Cutting Time 2.5min Wet

KS6030

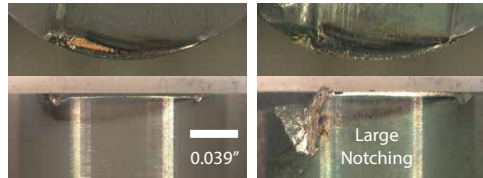
Competitor A (Whisker)



Cutting Conditions
Workpiece Material : Ni-Base Heat Resistant Alloy
Vc = 490sfm f = 0.016ipr D.O.C. = 0.079"
Cutting Time 2.5min Wet

KS6030

Competitor A (Whisker)



KS6030 provides superior tool life and efficiency in low to high speed machining. Also prevents burr formation and cracks due to excellent anti-notching performance.

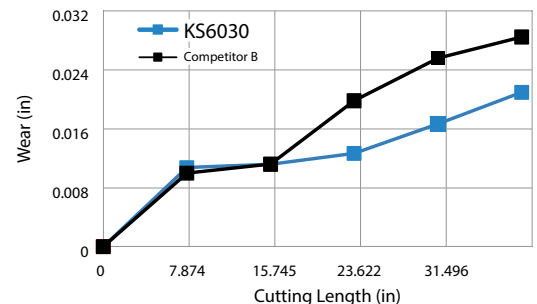
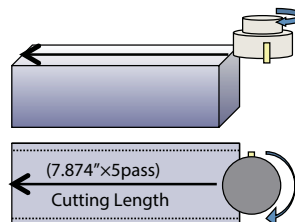
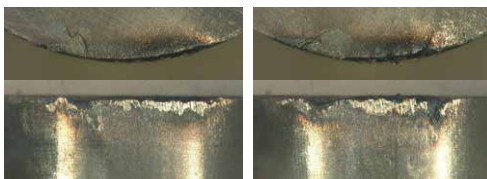
(Internal Evaluation)

MILLING

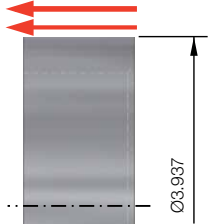
Cutting Conditions
Workpiece Material : Ni-Base Heat Resistant Alloy
Insert: RNG43T00420 (KS6030)
Vc = 3280sfm f = 0.004ipr D.O.C. = 0.039"

KS6030

Competitor B

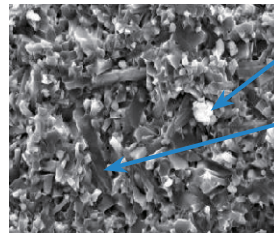


(Internal Evaluation)

KS6030 Case Study (Ni-Base Heat Resistant Alloy)			
Ni-Base Heat Resistant Alloy Seal • Vc = 560sfm • 0.008 ipr • 0.047" D.O.C. (Roughing) • 0.020" D.O.C. (Finishing) • Wet • RNG45E001 (KS6030)		KS6030	2 pcs / edge
		Competitor C	1 pc / edge
		KS6030 doubled the tool life under the same cutting conditions as Competitor C (User Evaluation)	

KS6040

- Improved wear and fracture resistance due to the mixture of hard and acicular (needle-shaped) particles
- Perfect for scaling and roughing

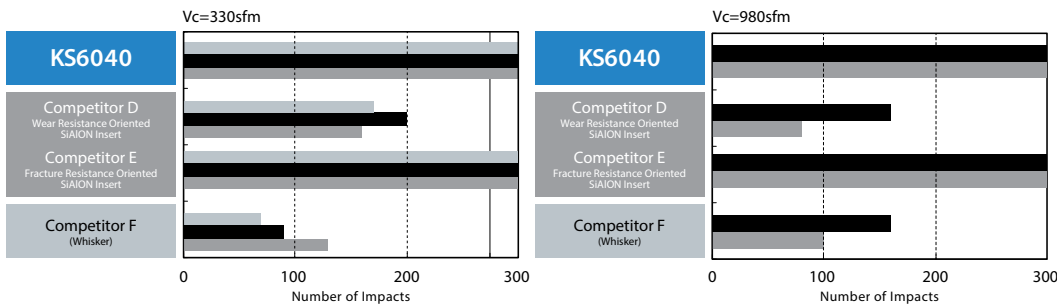
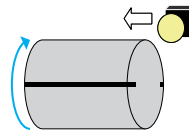


Hard Particle (Better Wear Resistance)

Acicular (Needle-Shaped) Particle (Better Fracture Resistance)

Fracture Resistance Comparison

Cutting Conditions
Workpiece Material : Ni-Base Heat Resistant Alloy
Insert: RNG432 T00220
Vc = 330sfm, 980sfm f = 0.008ipr D.O.C. = 0.039"Wet

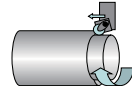


Compared to both Competitor F (Whisker) and Competitor D (Wear Resistance Oriented SiAlON Insert), KS6040 provides superior fracture resistance equivalent to Competitor E (Fracture Resistance Oriented SiAlON Insert)

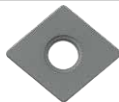
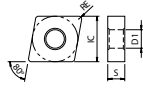
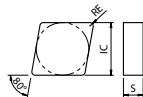
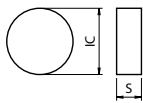
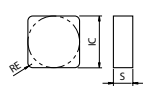
KS6040 improves wear and fracture resistance compared to conventional SiAlON inserts in heat resistant alloy machining

Recommended Cutting Conditions									
Grade	Roughing	Finishing-Medium	Profiling	Vc (sfm)					
				0	660	1310	1970	2630	3280
KS6030		★	★		WET				
								DRY	
KS6040	★	☆			WET				
								DRY	

3 : 1st Choice 1 : 2nd Choice ■ : Turning ■ : Milling

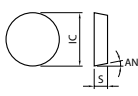
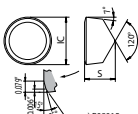
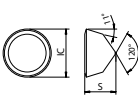
Turning Recommended Edge Prep: E001/ T00420 (R Honing)			
	Grade	Vc (sfm)	D.O.C. (inch)
	KS6030	500 - 1200	0.039 - 0.098
	KS6040	500 - 1000	0.039 - 0.098
Milling Recommended Edge Prep: T00420 (Chamfering)			
	Grade	Vc (sfm)	f (ipr)
	KS6030	2300 - 4000	0.039 - 0.079
	KS6040	2000 - 3300	0.039 - 0.079

Negative Inserts

Cutting Edge Preparation				Usage Classification								
Symbol	Specification	Example		● Light Interruption / 1st Choice ✱ Interruption / 1st Choice								
E	R-Honed	E001	0.001" × 25° R-Honed	Heat-resistant alloy								
T	Chamfered	T00420	0.004" × 25° Chamfered									
Insert		Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)				Ceramic	
							IC	S	D1	RE	KS6030	KS6040
		CNGA 432T00420 433T00420	T00420	CNGA 120408T01020 120412T01020	T01020	4	1/2	3/16	0.203	1/32 3/64		● ●
		CNG 432T00420	T00420	CNGN 120408T01020	T01020	4	1/2	3/16	-	1/32		●
		RNG 32T00420	T00420	RNGN 090300T01020	T01020	-	3/8	1/8	-	-	●	
		RNG 43E001	E001	RNGN 120400E003	E003	-	1/2	3/16	-	-	●	
		RNG 43T00420	T00420	RNGN 120400T01020	T01020	-	1/2	3/16	-	-	●	
		RNG 45E001	E001	RNGN 120700E003	E003	-	1/2	5/16	-	-	●	
		RNG 45E002	E002	RNGN 120700E005	E005	-	1/2	5/16	-	-		●
		RNG 45T00420	T00420	RNGN 120700T01020	T01020	-	1/2	5/16	-	-	●	●
		RNG 65E001	E001	RNGN 190700E003	E003	-	3/4	5/16	-	-	●	
		RNG 65T00420	T00420	RNGN 190700T01020	T01020	-	3/4	5/16	-	-	●	●
		RNG 85E001	E001	RNGN 250700E003	E003	-	1	5/16	-	-	●	
		SNG 433T00420	T00420	SNGN 120412T01020	T01020	8	1/2	3/16	-	3/64		●

● : Standard Item

Positive Inserts

Cutting Edge Preparation				Usage Classification								
Symbol	Specification	Example		● Light Interruption / 1st Choice ✱ Interruption / 1st Choice								
E	R-Honed	E001	0.001" × 25° R-Honed	Heat-resistant alloy								
T	Chamfered	T00420	0.004" × 25° Chamfered									
Insert		Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	Dimensions (in)				Angle (°)	Ceramic	
						IC	S	D1	RE	AN	K56030	K56040
		RPG 32E001	E001	RPGN 090300E003	E003	3/8	1/8	-	-	11	●	
		RPG 32T00420	T00420	RPGN 090300T01020	T01020	3/8	1/8	-	-	11	●	
		RPG 43E001	E001	RPGN 120400E003	E003	1/2	3/16	-	-	11	●	
		RPG 43T00420	T00420	RPGN 120400T01020	T01020	1/2	3/16	-	-	11	●	
		RCGX 24E002	E002	RCGX 060600E005	E005	1/4	1/4	-	-	-		●
		RCGX 24T00420	T00420	RCGX 060600T01020	T01020	1/4	1/4	-	-	-	●	●
		RCGX 35T00420	T00420	RCGX 090700T01020	T01020	3/8	0.315	-	-	-	●	●
		RCGX 45E001	E001	RCGX 120700E003	E003	1/2	0.315	-	-	-	●	
		RCGX 45T00420	T00420	RCGX 120700T01020	T01020	1/2	0.315	-	-	-	●	
		RPGX 24E001	E001	RPGX 060600E003	E003	1/4	1/4	-	-	-	●	
		RPGX 24T00420	T00420	RPGX 060600T01020	T01020	1/4	1/4	-	-	-	●	
		RPGX 35E001	E001	RPGX 090700E003	E003	3/8	0.315	-	-	-	●	
		RPGX 35T00420	T00420	RPGX 090700T01020	T01020	3/8	0.315	-	-	-	●	
		RPGX 45E001	E001	RPGX 120700E003	E003	1/2	0.315	-	-	-	●	

● : Standard Item



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