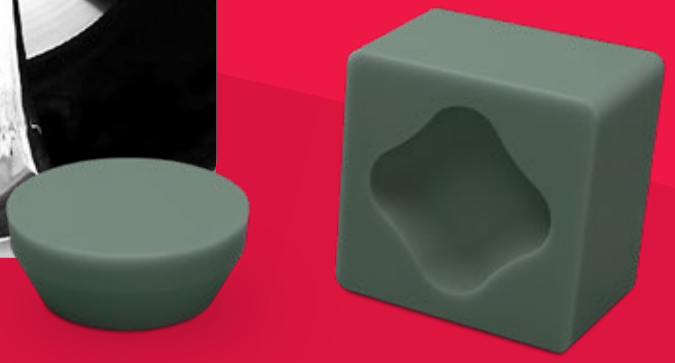
SPK by CeramTec

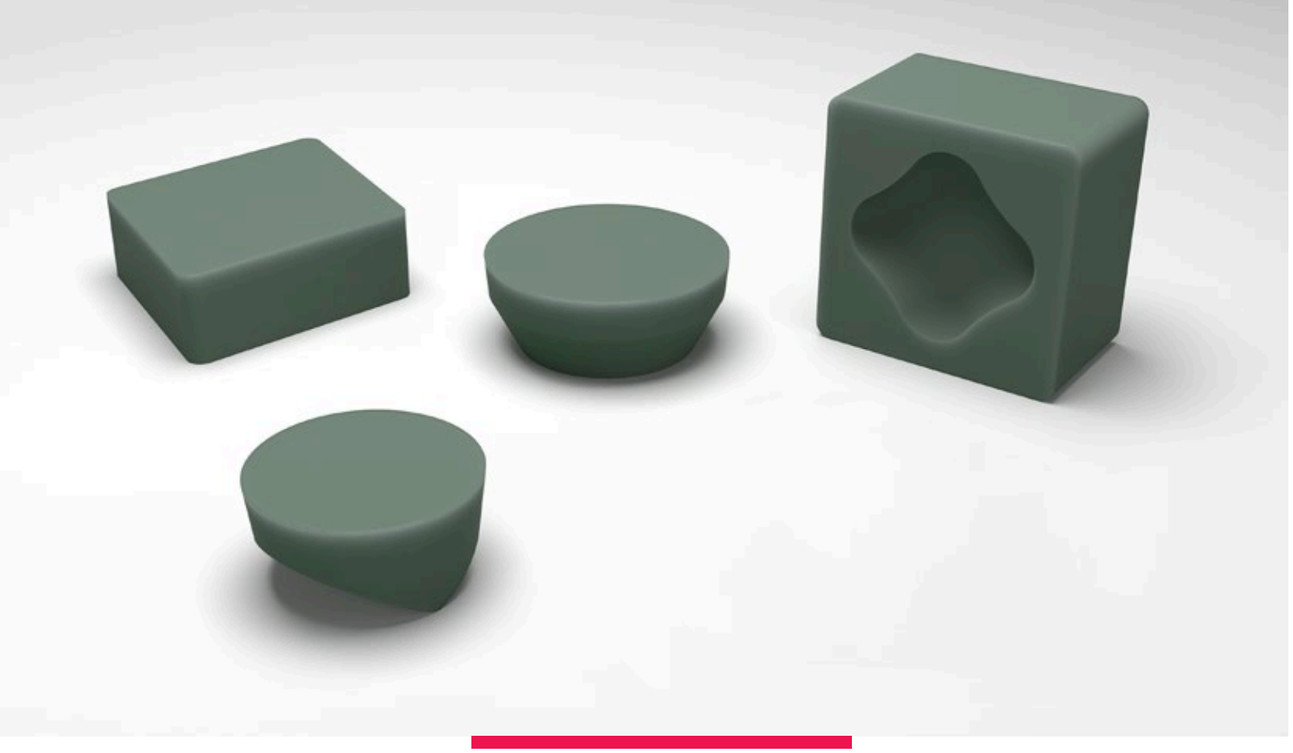


CUTTING TOOLS

Silicon Nitride Ceramics for Turning of Cast Iron Materials

LKT 100

THE CERAMIC EXPERTS



Different, even at first glance

Silicon nitride ceramics are regarded as extremely productive and tough all-rounders among cutting materials. With the development of LKT100, we have redefined the possibilities of this material. The result is a cutting material that is very process-reliable and at the same time enormously wear-resistant. Both properties guarantee an outstanding cost-benefit ratio when turning GJL materials.

LKT100 is different, even at first glance: In a new manufacturing process, we have been able to reduce the additive content in the outer functional zone of the inserts. An external indication of the additional machining step developed for this purpose is the fine colour nuances of the surface. This does not reduce the cutting performance. On the contrary: with LKT100, we offer you toughness typical of silicon nitride ceramics combined with even greater wear resistance - especially with interrupted cuts and large chip cross-sections.

Squaring the circle

„With the optimisation of the outer functional zone of LKT100, we have tried to square the circle and the result is impressive: LKT100 offers very good toughness with excellent wear resistance. This makes our new cutting material ideally suited for continuous as well as heavily interrupted cuts."

Dipl.-Ing. Johannes Schneider,
Senior Product Manager Cutting Tools at SPK by CeramTec

Three questions & answers about the silicon nitride ceramic LKT100:

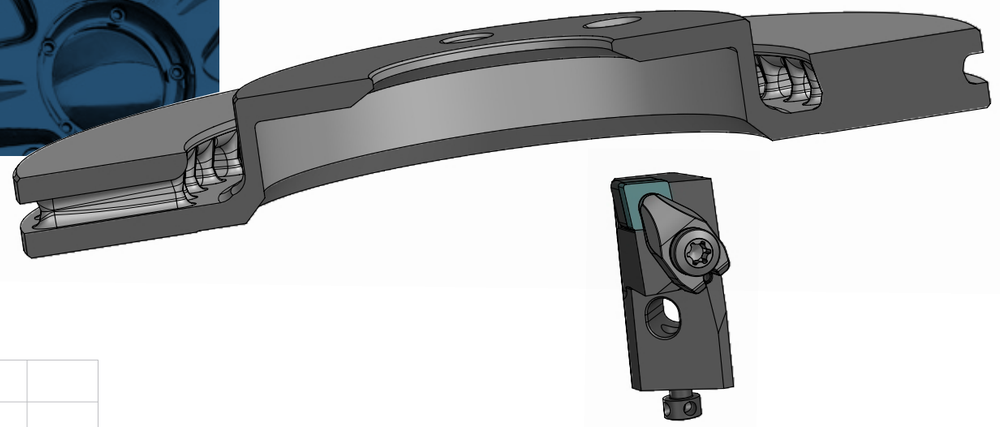
1 What cutting data can I run?
- v_c = 400 - 1.200 m/min
- a_p = 0,3 - 4,0 mm
- f = 0,15 - 0,60 mm

2 What can I machine and how?
- For turning and boring GJL materials in continuous to heavily interrupted cut
- Roughing and rough-finishing with constant and varying machining allowances
- Creates high chip cross-sections

3 What is the bottom line?
- Excellent wear resistance, especially notch wear resistance
- Allows large metal removal rates
- Shortens machining times
- Enables very good cost-per-part machining results

Fields of application and Application examples

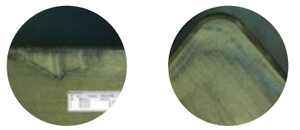
Application example:
Turn hat inside



SPK by CeramTec

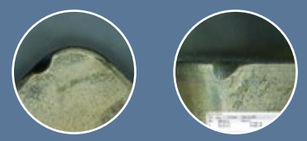
Significantly reduced and more uniform wear compared to conventional Sialon
v_c = 700 m/min.
a_p = 2,5 mm
f = 0,35 mm

Sialon conventional

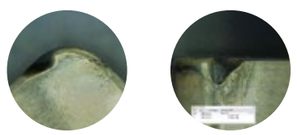


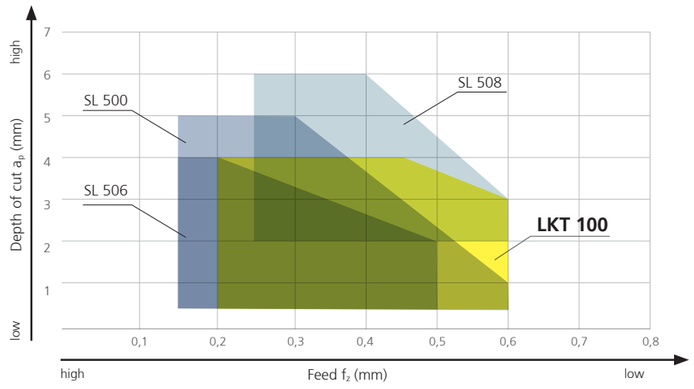
SPK by CeramTec

Significantly reduced wear
Stable cutting edge even under high mechanical and thermal load



Competitor variety



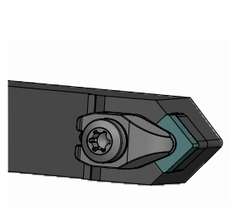


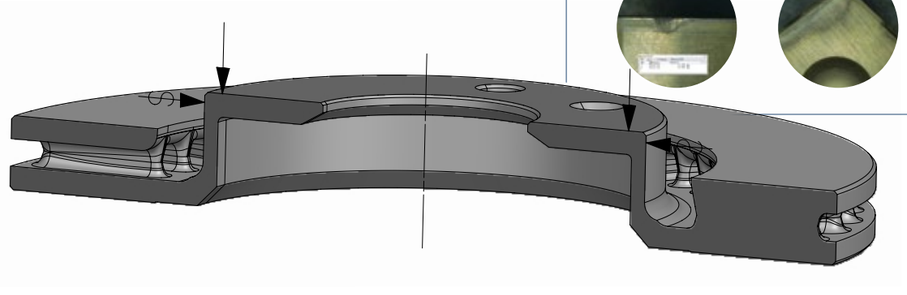
Hardness (HB)	Cutting speed vc (m/min.)		Cutting depth a_p (mm)	Feed rate f (mm)		Grade
	Recommended value v_c	Total Range v_c		Recommended value v_c	Total Range v_c	
25 Roughing (GJL)						
140 - 210	800	400 - 1000	1,0 - 4,0	0,50	0,20 - 0,60	LKT100
220 - 240	800	400 - 1000	1,0 - 4,0	0,50	0,20 - 0,60	LKT100
250 - 280	700	400 - 900	1,0 - 4,0	0,50	0,20 - 0,60	LKT100
6,3 Rough-Finishing (GJL)						
140 - 210	900	400 - 1200	0,3 - 2,0	0,25	0,15 - 0,50	LKT100
220 - 240	900	400 - 1200	0,3 - 2,0	0,25	0,15 - 0,50	LKT100
250 - 280	800	400 - 1000	0,3 - 2,0	0,25	0,15 - 0,50	LKT100

Field of application:
Turning and boring of GJL materials
Smooth to heavily interrupted cut; also for uneven, irregular stock allowance or stock allowance variations

Focus:
Roughing and medium machining; in individual cases up to finishing.
Note: For medium to heavy interruptions of the cut, reduce the chip cross section by up to 20% (reduction of feed rate and / or depth of cut).

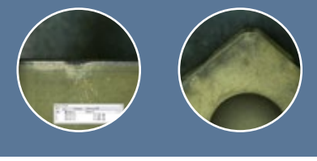
Application example:
Turning of outer diameter





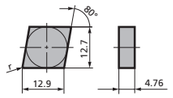
SPK by CeramTec

Significantly reduced wear and notch wear
Higher process reliability in application even under rough conditions
v_c = 800 m/min. f = 0,35 mm
a_p = 2,5 mm



Sialon conventional

Silicon nitride ceramic LKT 100

Insert	ISO	Grade	K: GJL: EN-GJL 150	K: GJL: EN-GJL 200	K: GJL: EN-GJL 250	K: GJL: EN-GJL 300	K: GJL: EN-GJL 350	K: GJS: EN-GJS 400-15	K: GJS: EN-GJS 500-7	K: GJS: EN-GJS 600-3	K: GJS: EN-GJS 700-2	K: GJS: EN-GJS 800-2	K: ADI: EN-GJS 800-8	K: ADI: EN-GJS 1000-5	K: ADI: EN-GJS 1200-2	K: ADI: EN-GJS 1400-0	K: SI GJS: EN-GJS 450-18	K: SI GJS: EN-GJS 500-14	K: SI GJS: EN-GJS 600-10	K: GJV: EN-GJV 300	K: GJV: EN-GJV 350	K: GJV: EN-GJV 400	K: GJV: EN-GJV 450	K: GJV: EN-GJV 500	H: HARD STEEL	H: CHILLED CAST IRON	H: DIE CASTING	S: HRSA	P: STEEL	SPK-Ref. No.
CNGN 12 04 .. T	**CNGN 12 04 12 T02020**	LKT 100	✦	✦	✦	✦	✦										✧	✧	✧											23.50.169.04.6
																														
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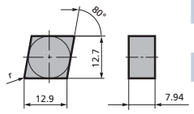																														
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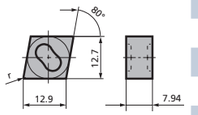
CNGX 12 07 .. T	**CNGX 12 07 12 T02020**	LKT 100	✦	✦	✦	✦	✦										✧	✧	✧											23.54.096.04.6
																														
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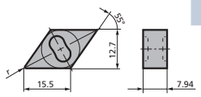
	CNGX 12 07 16 T03030	LKT 100	✦	✦	✦	✦	✦										✧	✧	✧											23.54.097.54.6
DNGX 15 07 .. T	**DNGX 15 07 16 T02020**	LKT 100	✦	✦	✦	✦	✦										✧	✧	✧											23.54.122.04.6
																														
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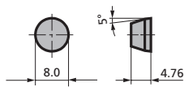																														
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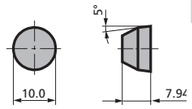																														
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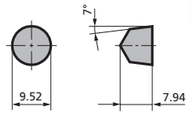
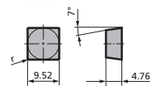
																														

K Cast Iron · H Hard materials · S HSRA · P Steel · ✦ Main application · ✧ Secondary applitcation

Insert	ISO	Grade	K: GJL: EN-GJL 150	K: GJL: EN-GJL 200	K: GJL: EN-GJL 250	K: GJL: EN-GJL 300	K: GJL: EN-GJL 350	K: GJS: EN-GJS 400-15	K: GJS: EN-GJS 500-7	K: GJS: EN-GJS 600-3	K: GJS: EN-GJS 700-2	K: GJS: EN-GJS 800-2	K: ADI: EN-GJS 800-8	K: ADI: EN-GJS 1000-5	K: ADI: EN-GJS 1200-2	K: ADI: EN-GJS 1400-0	K: SI GJS: EN-GJS 450-18	K: SI GJS: EN-GJS 500-14	K: SI GJS: EN-GJS 600-10	K: GJV: EN-GJV 300	K: GJV: EN-GJV 350	K: GJV: EN-GJV 400	K: GJV: EN-GJV 450	K: GJV: EN-GJV 500	H: HARD STEEL	H: CHILLED CAST IRON	H: DIE CASTING	S: HRSA	P: STEEL	SPK-Ref. No.
SCGN 09 04 .. F	**SCGN 09 04 12 F**	LKT 100	✦	✦	✦	✦	✦										✧	✧	✧											23.12.093.06.6
																														
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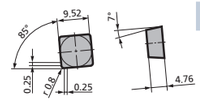																														
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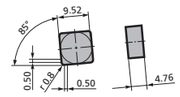																														
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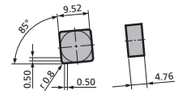																														
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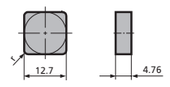																														
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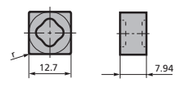																														
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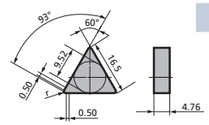																														

K Cast Iron · H Hard materials · S HSRA · P Steel · ✦ Main application · ✧ Secondary applitcation

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