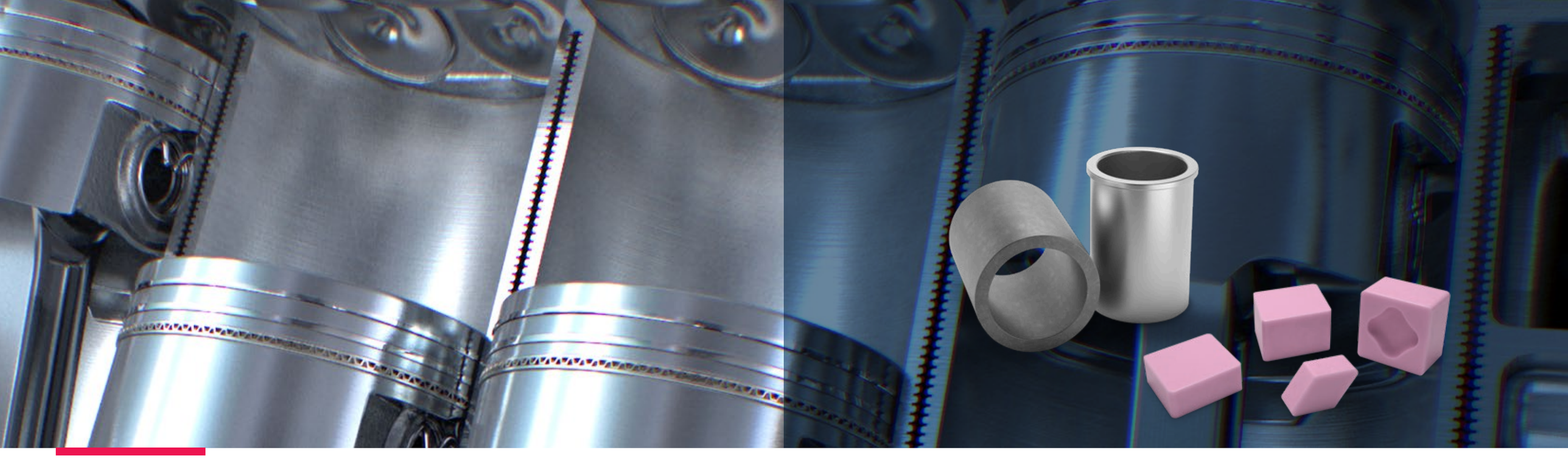
SPK by CeramTec

CUTTING TOOLS

Machining of Cast Iron /
Centrifugal Casting

Oxide Ceramic
AKT 180

THE CERAMIC EXPERTS



Oxide Ceramic AKT 180

For the process-secure machining of cast iron material, especially for those which are produced as centrifugal casting, we have developed the cutting material AKT 180. This cutting material is a zirconium oxide reinforced oxide ceramic. Thanks to this composition, the cutting material has increased wear resistance and gives the cutting material matrix a higher toughness. The high heat resistance retains on highest level. The matrix reinforcement makes it possible to achieve very high cutting values with the cutting material, with increased process reliability. The achievable removal rate and the reproducible wear and cutting behaviour enable the high economic efficiency of this cutting material. Especially in the series production from medium batch and up to high quantities, its significantly improved properties enable a stable cutting process with high output and reliability.

- Cutting data:
  v_c = 400 - 1200 m/min
  a_p = 0,2 - 4 mm
  f = 0,15 - 0,5 mm
- Materials: cast iron materials- specially produced by centrifugal casting process
- Machining method: Turning
- Roughing and finishing with continuous cut, without use of coolant

Hardness (HB)	Cutting speed v_c (m/min)		Depth of cut a_p (mm)	Feed f (mm)		Grade
	Recommended	Range		Recommended	Range	
25 Roughing; continuous cutting						
140 - 210	600	300 - 1000	1,0 - 4,0	0,30	0,20 - 0,50	AKT 180
220 - 240	500	200 - 800	1,0 - 4,0	0,30	0,20 - 0,50	AKT 180
250 - 280	300	100 - 400	1,0 - 4,0	0,30	0,20 - 0,50	AKT 180
6.3 Finishing; continuous cutting						
140 - 210	750	400 - 1200	0,2 - 1,0	0,20	0,15 - 0,40	AKT 180
220 - 240	550	300 - 800	0,2 - 1,0	0,20	0,15 - 0,40	AKT 180
250 - 280	350	150 - 450	0,2 - 1,0	0,20	0,15 - 0,40	AKT 180

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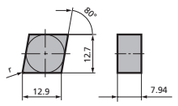
Inserts AKT 180

Inserts	Type	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 07 .. T	**CNGN 12 07 08 T02020**	AKT 180	✦	✦	✦	✦	✦																							36.50.022.04.6
																														
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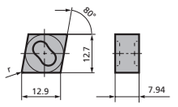																														
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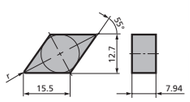																														
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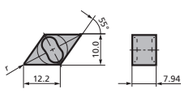																														
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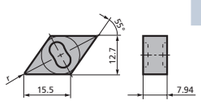																														
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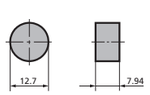																														

Inserts	Type	Grade	K: GJL EN-GJL 150	K: GJL EN-GJL 200	K: GJL EN-GJL 250	K: GJL EN-GJL 300	K: GJL EN-GJL 350	K: GJS EN-GJS 400-15	K: GJS EN-GJS 500-7	K: GJS EN-GJS 600-3	K: GJS EN-GJS 700-2	K: GJS EN-GJS 800-2	K: ADI EN-GJS 800-8	K: ADI EN-GJS 1000-5	K: ADI EN-GJS 1200-2	K: ADI EN-GJS 1400-0	K: SI GJS 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.
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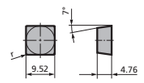																														
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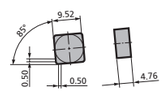																														
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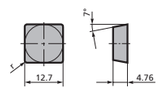																														
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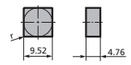																														
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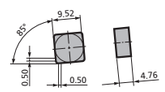																														
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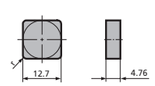																														
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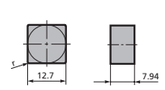																														
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K Cast Iron · H Hard materials · S HSRA · P Steel · Main application ✦ · Secondary applitcation ✧

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

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Inserts AKT 180

			K																										H			S	P	
			GJL					GJS						ADI			SI GJS			GJV														
Inserts	**Type**	**Grade**	EN-GJL 150	EN-GJL 200	EN-GJL 250	EN-GJL 300	EN-GJL 350	EN-GJS 400-15	EN-GJS 500-7	EN-GJS 600-3	EN-GJS 700-2	EN-GJS 800-2	EN-GJS 800-8	EN-GJS 1000-5	EN-GJS 1200-2	EN-GJS 1400-0	EN-GJS 450-18	EN-GJS 500-14	EN-GJS 600-10	EN-GJV 300	EN-GJV 350	EN-GJV 400	EN-GJV 450	EN-GJV 500	HARD STEEL	CHILLED CAST IRON	DIE CASTING	HRSA	STEEL	**SPK-Ref. No.**
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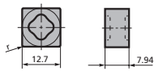	**SNGX 12 07 12 T02020**	AKT 180	✦	✦	✦	✦	✦																							36.14.169.04.6
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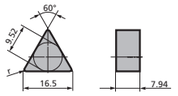	**TNGN 16 07 08 T02020**	AKT 180	✦	✦	✦	✦	✦																							36.30.011.04.6
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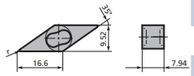
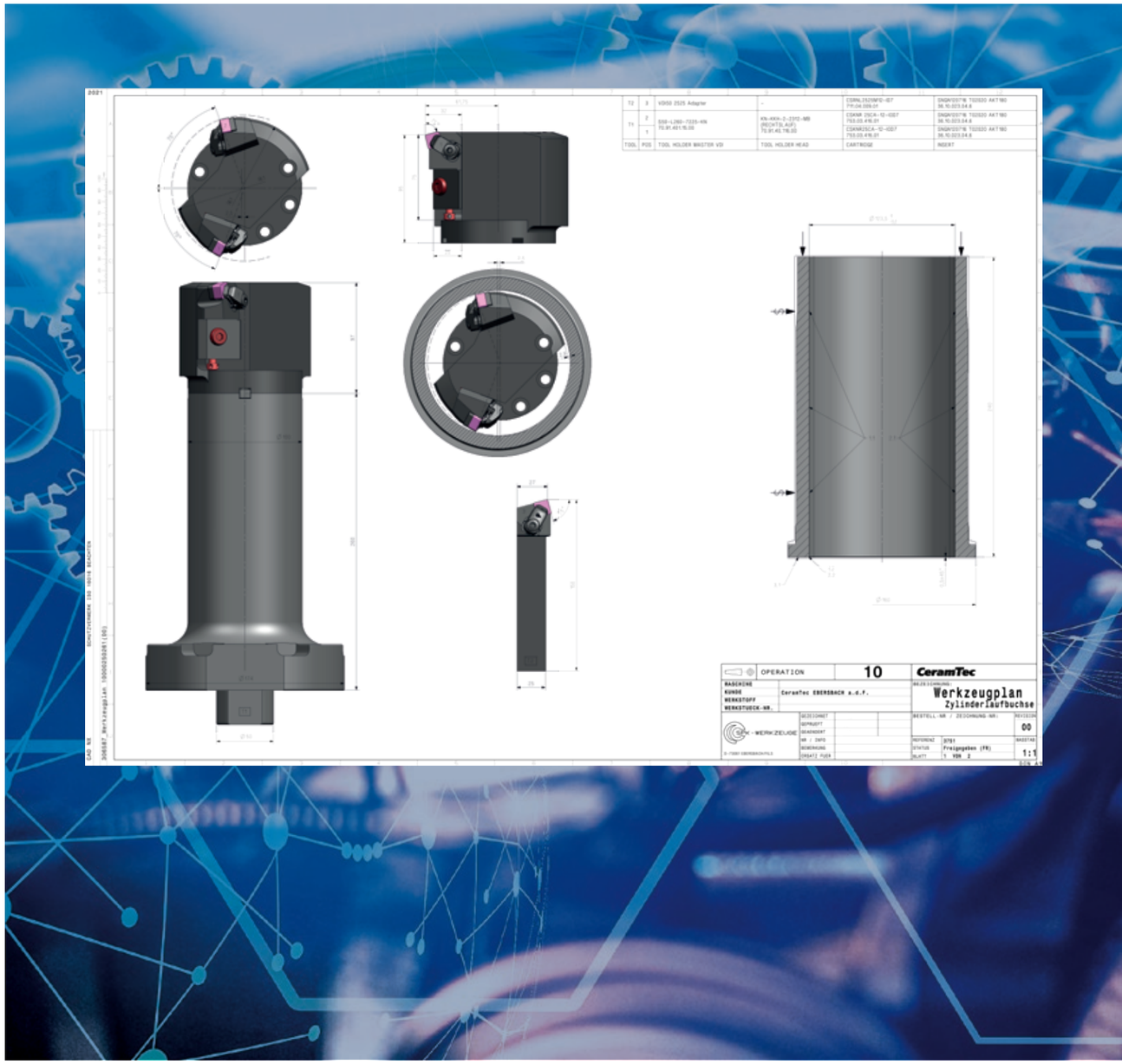
	**VNGX 16 07 12 T00520**	AKT 180	✦	✦	✦	✦	✦																							36.50.236.03.6

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

Machining Example
Cylinder liner
1. Set-up



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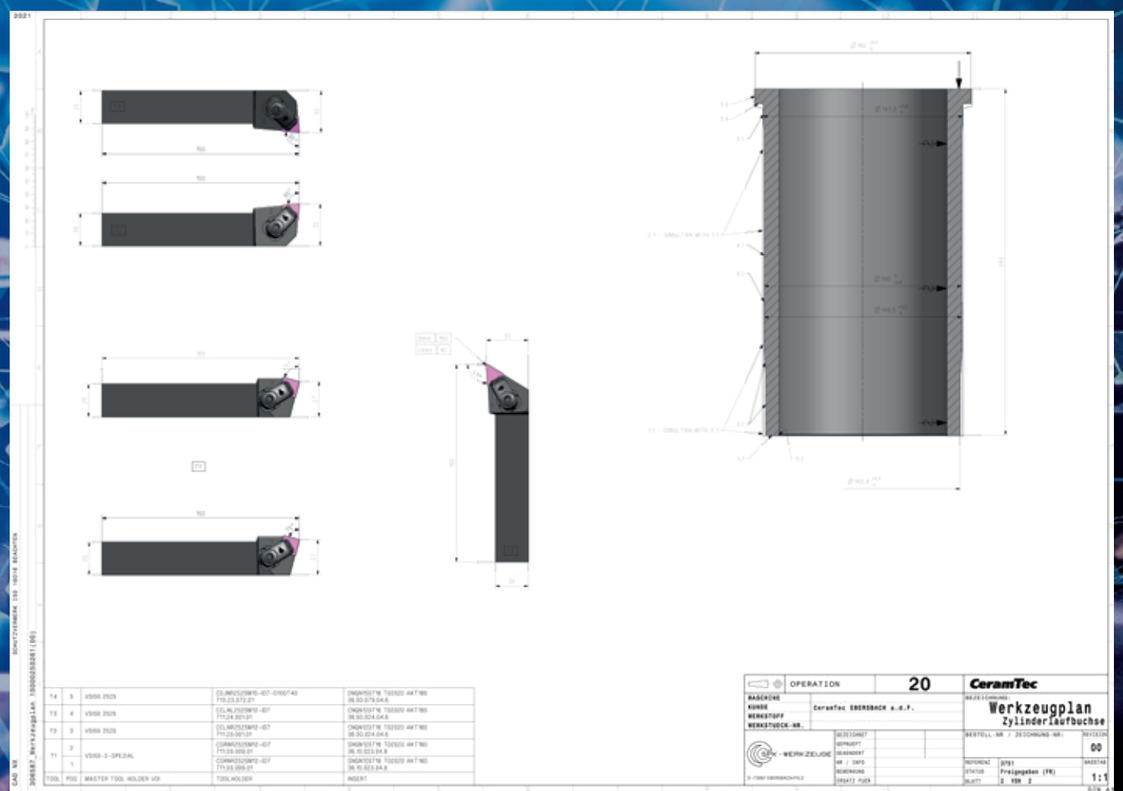
Machining Example
Cylinder liner
2. Set-up



External machining /
Simultaneous machining T1

v_c = 500 m/min.
a_p = 2 - 3 mm
f = 0,45 mm

External machining T2

v_c = 500 m/min.
a_p = 1 - 2 mm
f = 0,4 - 0,45 mm

External machining T3

v_c = 500 m/min.
a_p = 1 - 2 mm
f = 0,45 mm

Internal machining T4

v_c = 500 m/min.
a_p = 0,5 - 1 mm
f = 0,3 mm

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Single parts adding up to more.

AKT 180 is an oxide ceramic reinforced with zirconium oxide. The cutting material is intended for process-reliable, highly productive turning machining of components made of cast iron materials, which are manufactured in the centrifugal casting process.

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SPK Cutting Tools
by CeramTec GmbH
Hauptstraße 56
73061 Ebersbach / Fils, Germany

Phone: +49 7163 166-239
info@spk-tools.com
www.spk-tools.com

Website
www.spk-tools.com

YouTube Channel:
SPKCuttingTools

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