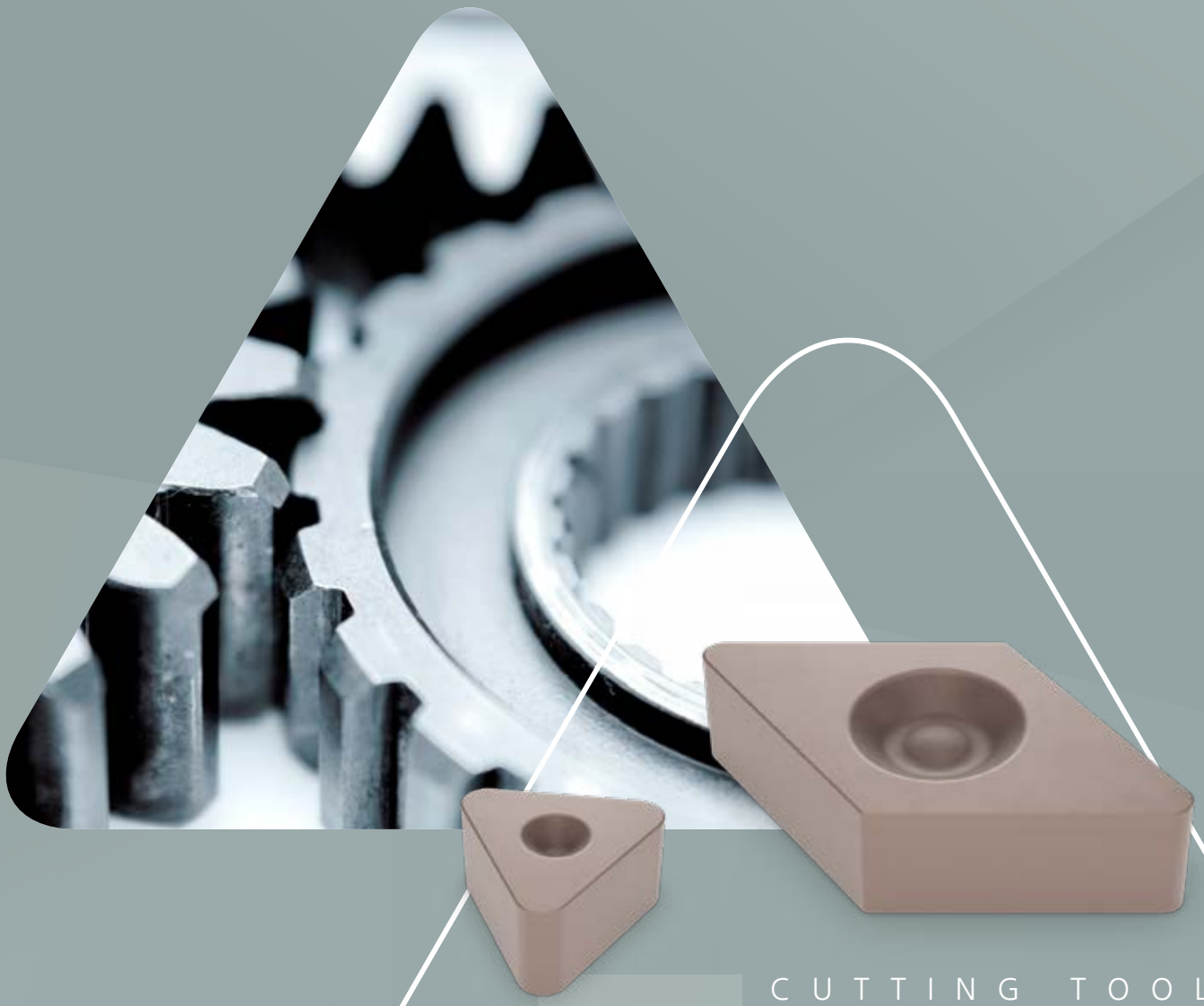
SPK by CeramTec



CUTTING TOOLS

CBN cutting material for
turning hardened steels

BHT 315

MACHINING MATTERS

BHT 315 – state of the art technology for machining of hardened steel

BHT 315 represents the most advanced state of CBN technology for machining hardened steels. Its high purity microstructure ensures an optimal cutting material structure. This leads to consistent machining performance and excellent surface finish.

The inserts are characterized by high fracture strength, even under extreme loads. This prevents tool breakage and machine downtime – the manufacturing process remains safe and predictable. At the same time, BHT 315 offers improved wear resistance, longer tool life, and thus enables more productive machining cycles.

Users benefit from precise results, dimensional accuracy, and outstanding surface finishes – even under demanding conditions. For applications with high material removal rates, BHT 315 is the ideal solution: maximum efficiency through strength, durability, and purity.

Anyone working with Machining of hardened steels knows how demanding this is for the cutting material. Especially when the highest surface finishes and dimensional accuracy must be achieved. This is exactly where our high purity grade BHT 315 comes in. It was developed to enable stable and process reliable turning of hardened steels – even under demanding conditions. For the user, this means: less risk in the process, reliable results, and the assurance of consistently high quality.

Product Management Cutting Tools of SPK by CeramTec

„When purity leads to better results!"

Three questions & answers about the CBN cutting material BHT 315:

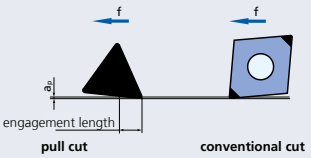
1 What cutting data can I use?

- v_c = 110 to 230 m/min
- a_p = 0.05 to 1.5 mm
- f = 0.05 to 0.45 mm

2 What can I machine and how?

- For high speed turning of hardened steels in continuous to interrupted cuts.
- Finishing and medium machining, up to a_p max. 1.5 mm also roughing.
- Main applications are precision machining of transmission, engine, and drive components.

- Pull cut: High feed rates with simultaneously top surface finishes.

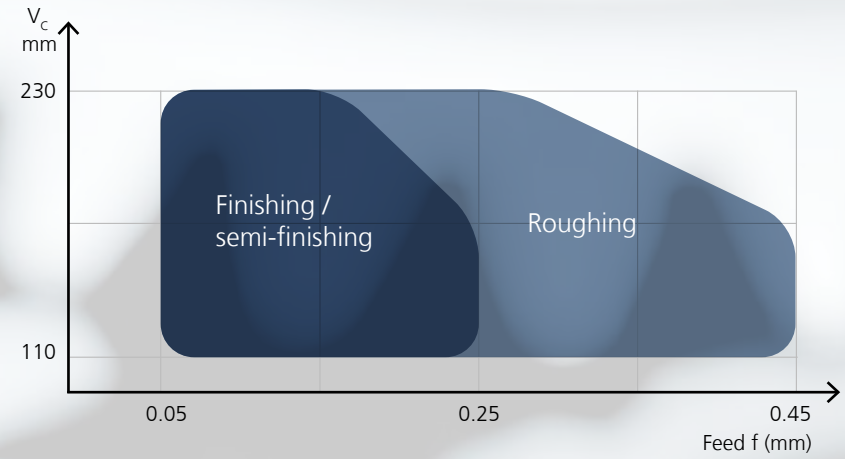


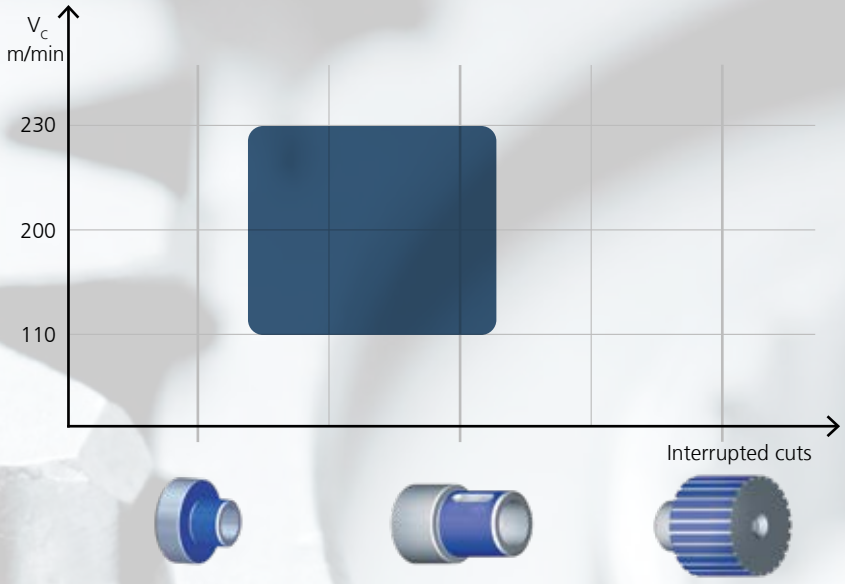
3 What do I gain overall?

- Advanced multi layer PVD coating that significantly reduces crater wear and flank wear.
- High wear resistance and consistently high surface quality.
- The reinforced CBN substrate provides an optimal combination of dimensional accuracy, surface quality, and tool life.
- Very good cost per part machining results.

Application recommendation

Turning of hardened steels

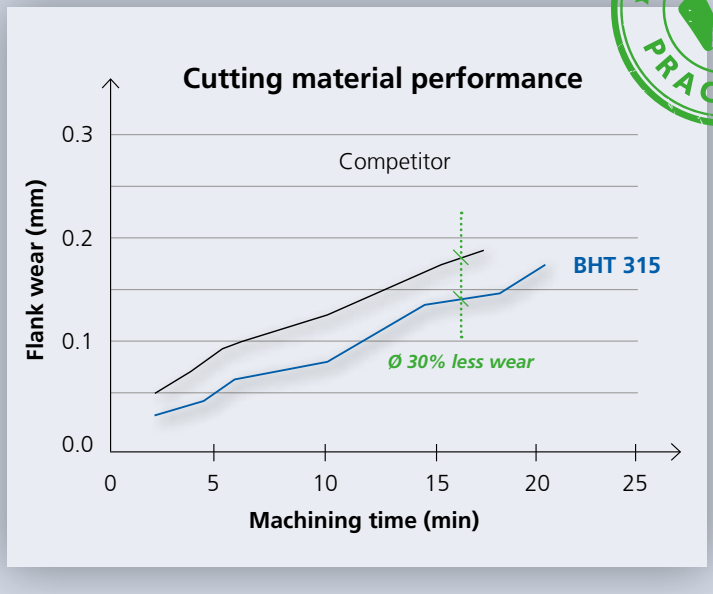


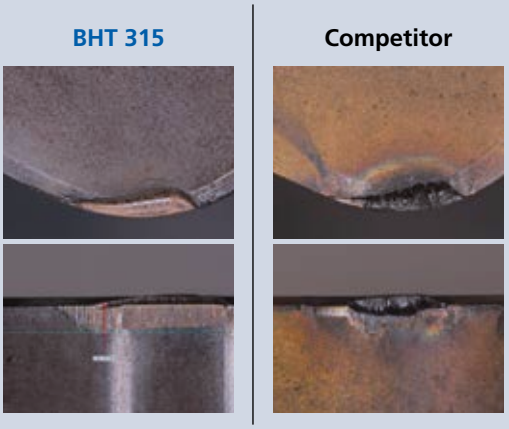


SPK by CeramTec in Action

New BHT 315 series

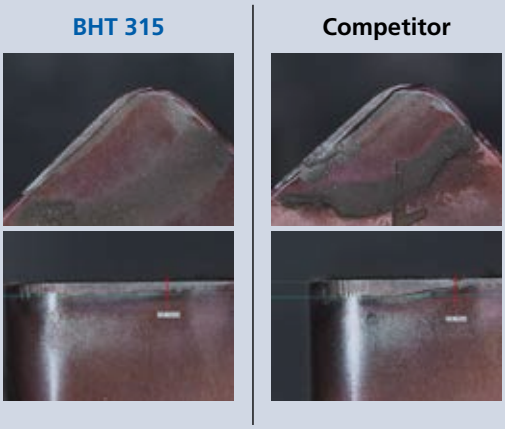
PERFORMANCE COMPARISON





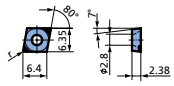
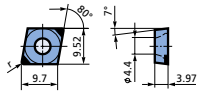
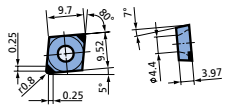
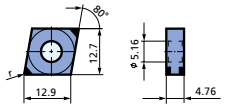
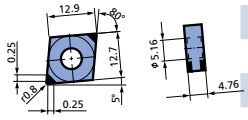
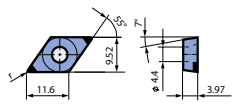
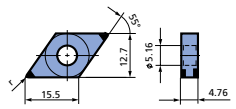
Material: 16MnCr5 (60+2 HRC)
Insert: SNGN 12 04 12 S-S
Cutting data: v_c = 160 m/min / f = 0.12 mm / a_p = 0.2 mm
Machining: dry and continuous cut

PERFORMANCE COMPARISON

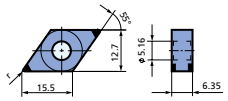
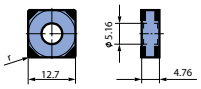
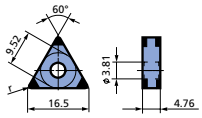
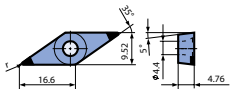
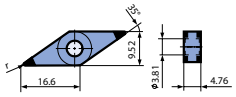
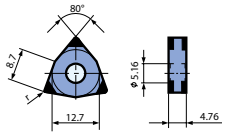


Material: 16MnCr5 (60+2 HRC)
Insert: SNGX 09 04 08 S-S H10S
Cutting data: v_c = 150 m/min
f = 0.1 mm / a_p = 1.5 mm
Machining: dry and continuous cut

Corner-tipped CBN inserts for hard turning

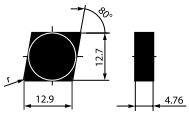
				S		K			H			P	
Insert	**Designation**	**Grade**	NO. OF EDGES	NICKEL BASED	COBALT BASED	GJL	GJS	ADDITIONAL	STEEL HARDENED	CHILLED CAST IRON	MOLDED CASTING	STEEL	**SPK-Ref. No.**
CCGW 06 02 .. - BL	**CCGW 06 02 04 S 01025-BL**	BHT 315	2						✦				26.57.476.46.1
	**CCGW 06 02 08 S 01025-BL**	BHT 315	2						✦				26.57.477.46.1
CCGW 09 T3 .. - BL	**CCGW 09 T3 04 S 01025-BL**	BHT 315	2						✦				26.57.478.46.1
	**CCGW 09 T3 08 S 01025-BL**	BHT 315	2						✦				26.57.479.46.1
	CCGW 09 T3 12 S 01025-BL	BHT 315	2						✦				26.57.481.46.1
CCGW 09 T3 08 S -BL - 95Z025	**CCGW 09 T3 08 S 01025-BL 95Z025**	BHT 315	2						✦				26.57.480.46.1
													
CNGA 12 04 .. - LL	**CNGA 12 04 04 S 01025-LL**	BHT 315	4						✦				26.56.449.46.1
	**CNGA 12 04 08 S 01025-LL**	BHT 315	4						✦				26.56.450.46.1
	CNGA 12 04 12 S 01025-LL	BHT 315	4						✦				26.56.451.46.1
CNGA 12 04 .. - LL - 95Z025	**CNGA 12 04 08 S 01025-LL 95Z025**	BHT 315	4						✦				26.56.452.46.1
													
DCGW 11 T3 .. - BL	**DCGW 11 T3 04 S 01025-BL**	BHT 315	2						✦				26.57.482.46.1
	**DCGW 11 T3 08 S 01025-BL**	BHT 315	2						✦				26.57.483.46.1
	DCGW 11 T3 12 S 01025-BL	BHT 315	2						✦				26.57.484.46.1
DNGA 15 04 .. - LL	**DNGA 15 04 04 S 01025-LL**	BHT 315	4						✦				26.56.453.46.1
	**DNGA 15 04 08 S 01025-LL**	BHT 315	4						✦				26.56.454.46.1
	DNGA 15 04 12 S 01025-LL	BHT 315	4						✦				26.56.455.46.1

Corner-tipped CBN inserts for hard turning

				S		K			H			P	
Insert	**Designation**	**Grade**	NO. OF EDGES	NICKEL BASED	COBALT BASED	GJL	GJS	ADDITIONAL	STEEL HARDENED	CHILLED CAST IRON	MOLDED CASTING	STEEL	**SPK-Ref. No.**
DNGA 15 06 .. - LL	**DNGA 15 06 04 S 01025-LL**	BHT 315	4						✦				26.56.456.46.1
	**DNGA 15 06 08 S 01025-LL**	BHT 315	4						✦				26.56.457.46.1
	DNGA 15 06 12 S 01025-LL	BHT 315	4						✦				26.56.458.46.1
SNGA 12 04 .. - NL	**SNGA 12 04 04 S 01025- NL**	BHT 315	8						✦				26.16.407.46.1
	**SNGA 12 04 08 S 01025- NL**	BHT 315	8						✦				26.16.408.46.1
	SNGA 12 04 12 S 01025- NL	BHT 315	8						✦				26.16.409.46.1
TNGA 16 04 .. - ML	**TNGA 16 04 04 S 01025-ML**	BHT 315	6						✦				26.36.410.46.1
	**TNGA 16 04 08 S 01025-ML**	BHT 315	6						✦				26.36.411.46.1
	TNGA 16 04 12 S 01025-ML	BHT 315	6						✦				26.36.412.46.1
VBGW 16 04 .. - BL	**VBGW 16 04 04 S 01025-BL**	BHT 315	2						✦				26.57.485.46.1
	**VBGW 16 04 08 S 01025-BL**	BHT 315	2						✦				26.57.486.46.1
	VBGW 16 04 12 S 01025-BL	BHT 315	2						✦				26.57.487.46.1
VNGA 16 04 .. - LL	**VNGA 16 04 04 S 01025-LL**	BHT 315	4						✦				26.56.459.46.1
	**VNGA 16 04 08 S 01025-LL**	BHT 315	4						✦				26.56.460.46.1
	VNGA 16 04 12 S 01025-LL	BHT 315	4						✦				26.56.461.46.1
WNGA 08 04 .. - ML	**WNGA 08 04 04 S 01025-ML**	BHT 315	6						✦				26.66.410.46.1
	**WNGA 08 04 08 S 01025-ML**	BHT 315	6						✦				26.66.411.46.1
	WNGA 08 04 12 S 01025-ML	BHT 315	6						✦				26.66.412.46.1

K	Cast Iron	H	Hard Materials	S	HSRA	P	Steel	Main Application ✦	Additional Application ✧

Solid CBN inserts for hard turning

				S		K			H			P	
Insert	**Designation**	**Grade**	NO. OF EDGES	NICKEL BASED	COBALT BASED	GJL	GJS	ADDITIONAL	STEEL HARDENED	CHILLED CAST IRON	MOLDED CASTING	STEEL	**SPK-Ref. No.**
CNGN 12 04 .. 	**CNGN 12 04 08 S 01025-S**	BHT 315	4						✦				26.52.009.46.1
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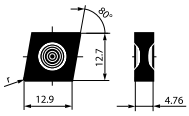
CNGX 12 04 .. H10M 	**CNGX 12 04 08 S 01025-S-H10M**	BHT 315	4						✦				26.52.739.46.1
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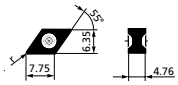
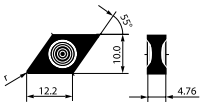
DNGX 07 04 .. H10S 	**DNGX 07 04 08 S 01025-S-H10S**	BHT 315	4						✦				26.52.717.46.1
	DNGX 07 04 12 S 01025-S-H10S	BHT 315	4						✦				26.52.734.46.1
DNGX 12 04 .. H10M 	**DNGX 12 04 08 S 01025-S-H10M**	BHT 315	4						✦				26.52.775.46.1
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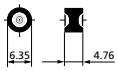
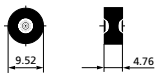
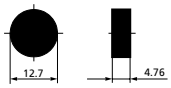
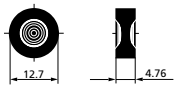
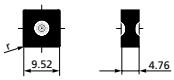
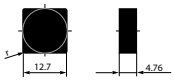
RNGX 06 04 .. H10S 	**RNGX 06 04 00 S 01025-S-H10S**	BHT 315	-						✦				26.42.050.46.1
RNGX 09 04 .. H10S 	**RNGX 09 04 00 S 01025-S-H10S**	BHT 315	-						✦				26.42.048.46.1
RNGN 12 04 .. 	**RNGN 12 04 00 S 01025-S**	BHT 315	-						✦				26.42.010.46.1
RNGX 12 04 .. H10M 	**RNGX 12 04 00 S 01025-S-H10M**	BHT 315	-						✦				26.42.052.46.1

| | | | | | |

Solid CBN inserts for hard turning

				S		K			H			P	
Insert	**Designation**	**Grade**	NO. OF EDGES	NICKEL BASED	COBALT BASED	GJL	GJS	ADDITIONAL	STEEL HARDENED	CHILLED CAST IRON	MOLDED CASTING	STEEL	**SPK-Ref. No.**
SNGX 09 04 .. H10S	**SNGX 09 04 08 S 01025-S-H10S**	BHT 315	8						✦				26.12.716.46.1
	**SNGX 09 04 12 S 01025-S-H10S**	BHT 315	8						✦				26.12.717.46.1
SNGN 12 04 ..	**SNGN 12 04 08 S 01025-S**	BHT 315	8						✦				26.12.040.46.1
	**SNGN 12 04 12 S 01025-S**	BHT 315	8						✦				26.12.021.46.1
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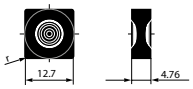
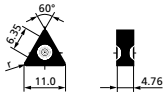
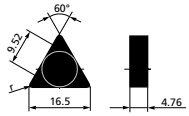
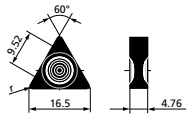
	**SNGX 12 04 12 S 01025-S-H10M**	BHT 315	8						✦				26.12.719.46.1
TNGX 11 04 .. H10S	**TNGX 11 04 08 S 01025-S-H10S**	BHT 315	6						✦				26.32.072.46.1
	**TNGX 11 04 12 S 01025-S-H10S**	BHT 315	6						✦				26.32.080.46.1
TNGN 16 04 ..	**TNGN 16 04 08 S 01025-S**	BHT 315	6						✦				26.32.027.46.1
	**TNGN 16 04 12 S 01025-S**	BHT 315	6						✦				26.32.006.46.1
TNGX 16 04 .. H10M	**TNGX 16 04 08 S 01025-S-H10M**	BHT 315	6						✦				26.32.081.46.1
	**TNGX 16 04 12 S 01025-S-H10M**	BHT 315	6						✦				26.32.075.46.1

** Edge lengths based on a reference radius of r = 0.8 mm*

K	Cast Iron	**H**	Hard Materials	**S**	HSRA	**P**	Steel	Main Application ✦	Additional Application ✧

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