

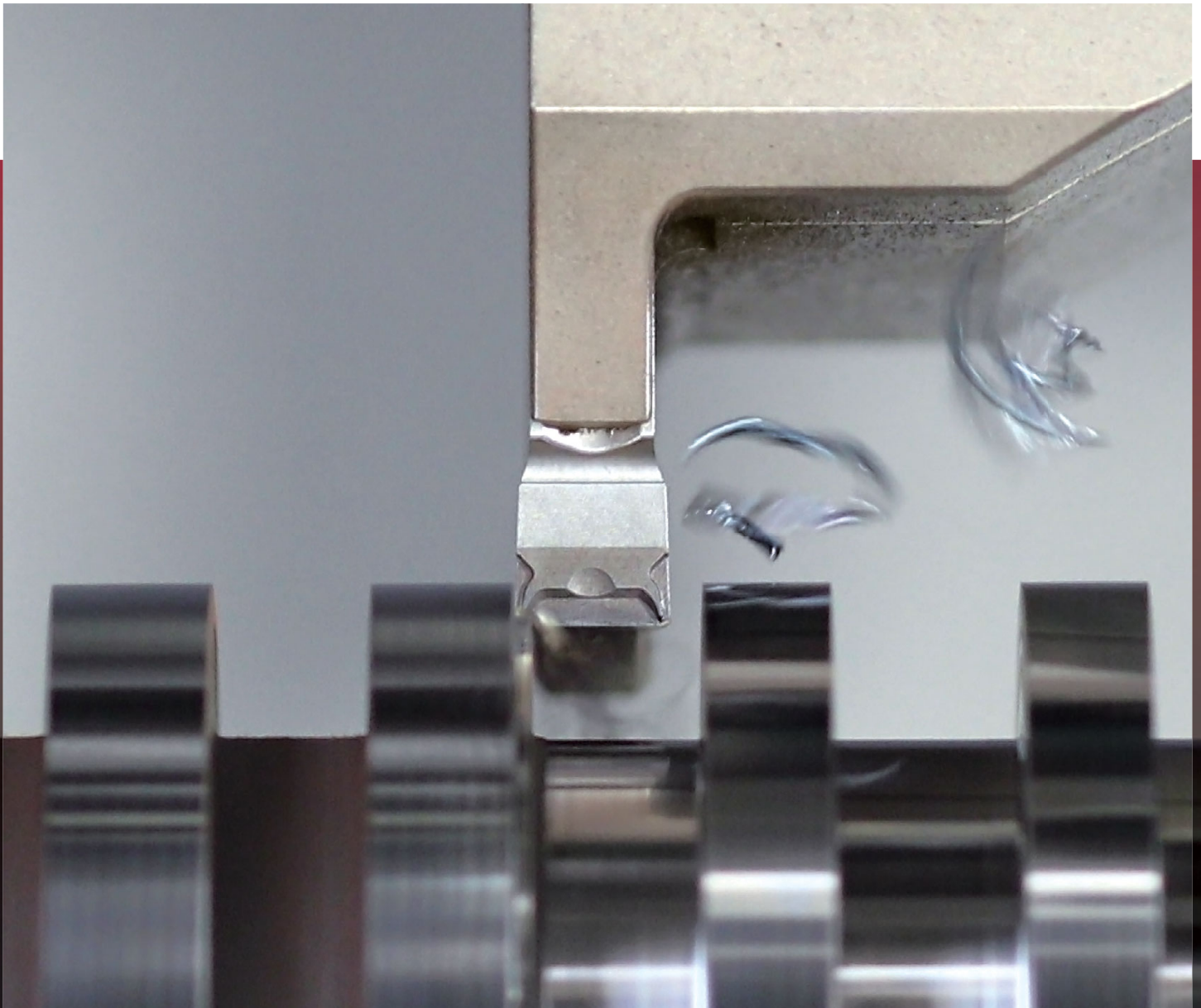


Grooving and parting-off tool

**TUNGCUT**

Tungaloy Report No. 391S9-G

# CBN-tipped inserts with integrated 3D chipbreaker

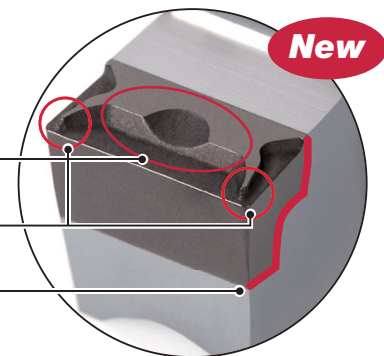


## Consistent chip control with integrated 3D chipbreaker

- No more concerns with chip bird-nesting during grooving of hardened steel parts

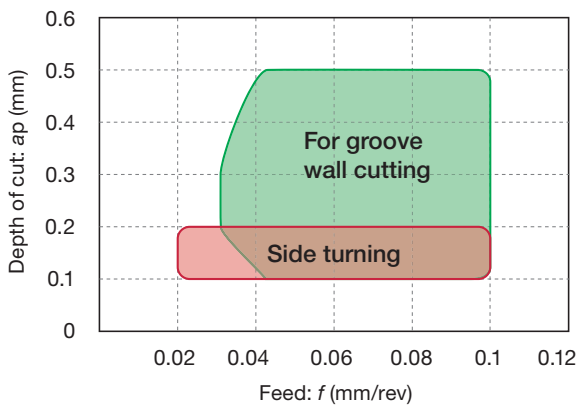
### STX inserts **WAVYJOINT**

- Functions during grooving processes
- Functions during groove wall cutting and side turning
- Secure bondage between the CBN tip and insert enabled with **WAVYJOINT** technology

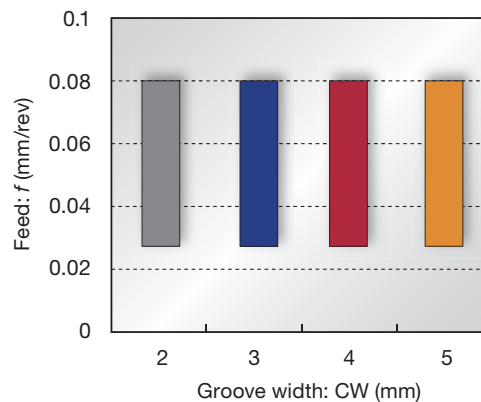


### ■ Recommended cutting parameters

#### ■ For groove wall cutting and side turning

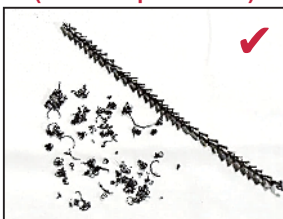


#### ■ For grooving



### ■ Chip control

STX insert  
(with chipbreaker)



Competitor  
(with no chipbreaker)



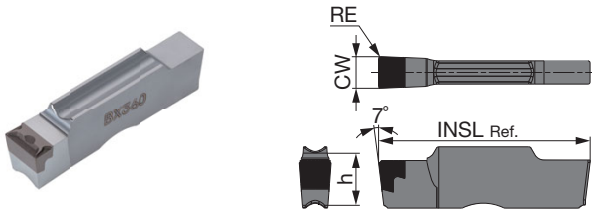
H	Insert	: STX300-020 BX360
	Toolholder	: CTEL2525-3T09
	Workpiece material:	: SCM415 (60-62HRC)
	Cutting speed	: $V_c = 120$ m/min
	Feed	: $f = 0.05$ mm/rev
	Depth of cut	: $a_p = 0.3$ mm
	Application	: O.D. grooving and wall cutting, continuous
	Coolant	: Wet

**STX insert provided better chip control.**

## INSERTS

### STX

External, face grooving



<b>P</b>	Steel									
<b>M</b>	Stainless									
<b>K</b>	Cast iron									
<b>N</b>	Non-ferrous									
<b>S</b>	Superalloys									
<b>H</b>	Hard materials	★								★ : First choice



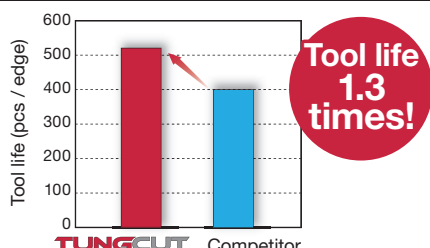
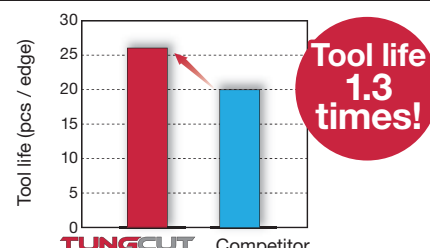
Designation	Seat size	CW $\pm$ 0.025	RE	CBN						INSL	h
				BX360							
STX200-020	2	2	0.2	●						20	5
STX300-020	3	3	0.2	●						20	5
STX400-020	4	4	0.2	●						20	5
STX500-020	5	5	0.2	●						25	5.5

● : New

## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed Vc (m/min)
<b>H</b>	External grooving				
	Groove wall cutting	> 50 HRC	First choice	BX360	80 - 150
	Side turning				
	Internal grooving	> 50 HRC	First choice	BX360	80 - 120
	Face grooving				

## PRACTICAL EXAMPLES

Workpiece type		Piston head	Shaft
Toolholder		CTEL2525-5T12	CTER2525-4T10
Insert		STX500-020	STX5400-020
Grade		BX360	BX360
Workpiece material		SCM415 (50-60HRC)	SKD61, X40CrMoV5-1 (58-62HRC)
		 <b>H</b>	 <b>H</b>
Cutting conditions	Cutting speed : $V_c$ (m/min)	97 - 106 (for groove walls), 79 (for side-turning)	120
	Feed : $f$ (mm/rev)	0.03 (for groove walls), 0.08 (for side-turning)	0.06 (for groove walls), 0.1 (for side-turning)
	Groove width : $CW$ (mm)	5	4
	Machining	External grooving, wall cutting, and side turning	External grooving, wall cutting, and side turning
	Coolant	Wet	Wet
Results		 <p><b>TungCut CBN tipped STX insert provided excellent chip control, while eliminating nesting of chips. As a result, tool life increased by 1.3 times.</b></p>	 <p><b>TungCut CBN tipped STX insert provided excellent chip control, while eliminating bird nesting of chips. As a result, tool life increased by 1.3 times.</b></p>



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