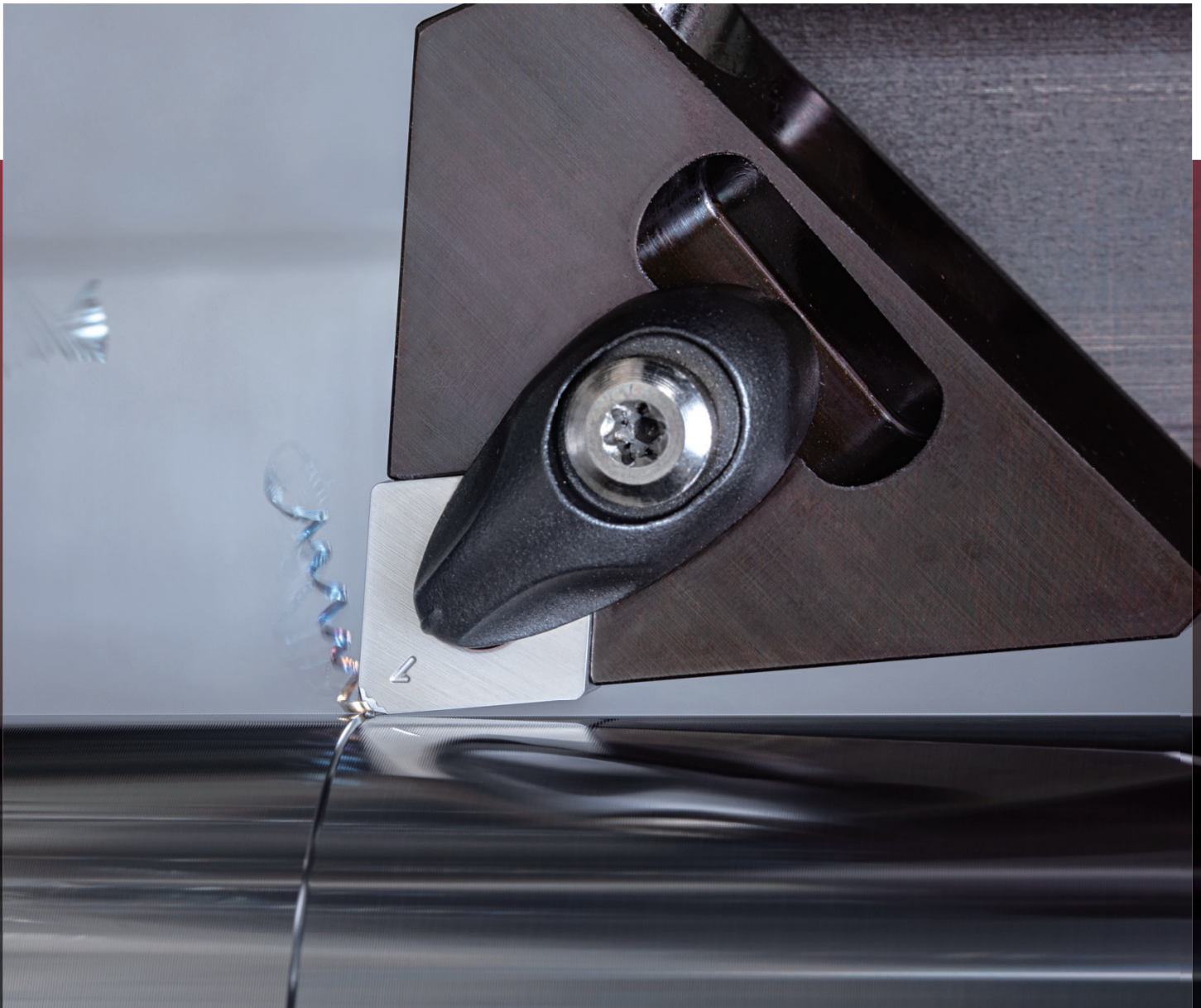


CBN insert

HARDBREAKER HP

Tungaloy Report No. 518S2-G

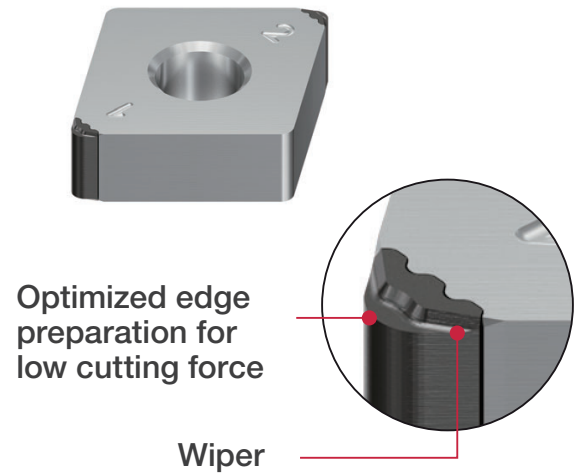
Expanding double-sided inserts with HP-style chipbreaker





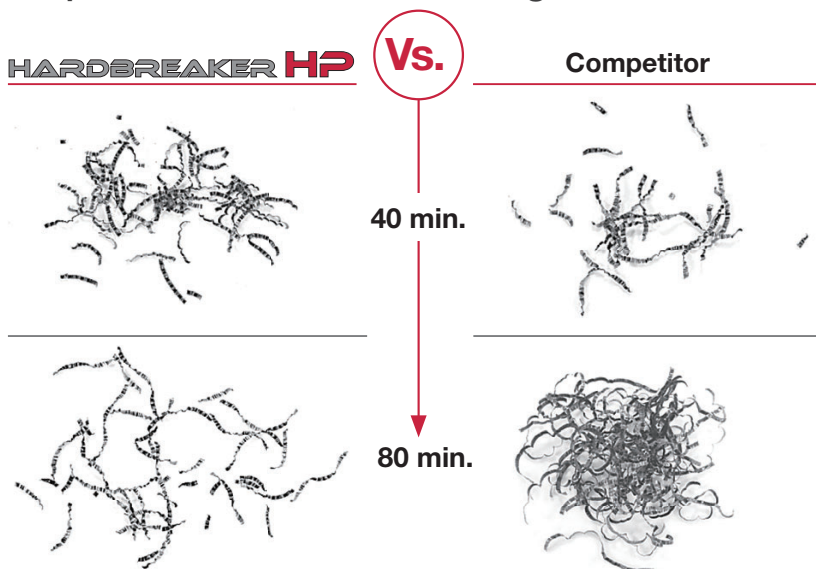
HP Chipbreaker for finishing hardened steel

- 1 By separating the chipbreaker from the cutting edge, the cutting force imposed on the cutting edge during machining is significantly reduced, thus providing long tool life.
- 2 The cutting edge preparation is designed to ensure easy cutting at low cutting forces, while maintaining close tolerances with no deviations.
- 3 The **HP** style chipbreaker, combined with built-in wipers, yields excellent surface quality and good chip control.



CUTTING PERFORMANCE

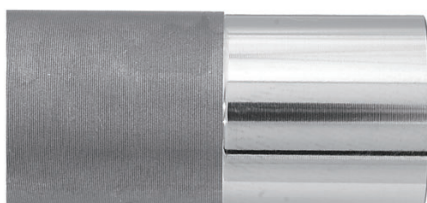
Chip control is stable for a long time



Insert	: 2QP-CNGM120408-HP
Workpiece material	: JIS SCM420 58HRC
Cutting speed	: $V_c = 180$ m/min
Feed	: $f = 0.15$ mm/rev
Depth of cut	: $a_p = 0.15$ mm
Holder	: ACLNR2525M12-A
Coolant	: Wet
Machining	: External continuous cutting

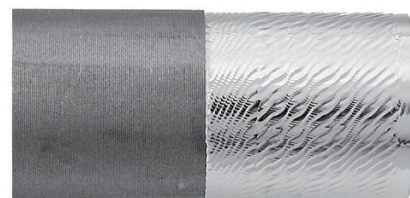
Chatter stability

HARDBREAKER HP



Due to low cutting force, chatter stability is greatly improved






Competitor (without breaker)



INSERT

NEGATIVE TYPE

- : Continuous cutting
- : Light interrupted cutting
- : Heavy interrupted cutting

Shape	Designation	Dimension (mm)										Edge prep.					Wiper	Chipbreaker	
		BXA10	BXA20	No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	LFLC	H					
	4QS-CNGG** -HP	●●●	●●●	4	1.6	0.4	12.7	4.76	5.16										
	4QS-CNGG120404-HP	●●●	●●●	4	1.6	0.4	12.7	4.76	5.16										○
	4QS-CNGG120408-HP	●●●	●●●	4	1.5	0.8	12.7	4.76	5.16										○
	4QS-DNGG** -HP	●●●	●●●	4	1.8	0.8	12.7	4.76	5.16										○
	4QS-DNGG120408WL-HP	●●●	●●●	4	1.8	0.8	12.7	4.76	5.16										○
	4QS-DNGG150404-HP	●●●	●●●	4	2	0.4	12.7	4.76	5.16										○
	6QS-TNGG** -HP	●●●	●●●	4	1.6	0.8	12.7	4.76	5.16										○
	6QS-TNGG150408-HP	●●●	●●●	4	1.6	0.8	12.7	4.76	5.16										○
	6QS-TNGG160404-HP	●●●	●●●	6	1.9	0.4	9.525	4.76	3.81										○
	6QS-TNGG160408-HP	●●●	●●●	6	1.6	0.8	9.525	4.76	3.81										○
	6QS-TNGG160412-HP	●●●	●●●	6	1.8	1.2	9.525	4.76	3.81										○
	6QS-TNGG160412-HP	●●●	●●●	6	1.8	1.2	9.525	4.76	3.81										○
	4QS-VNGG** -HP	●●●	●●●	4	2.6	0.4	9.525	4.76	3.81										○
	4QS-VNGG160404-HP	●●●	●●●	4	2.6	0.4	9.525	4.76	3.81										○
	4QS-VNGG160408-HP	●●●	●●●	4	1.7	0.8	9.525	4.76	3.81										○

●●● : Will be released in January 2022

●●● : Line up

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