

CBN insert

HARDBREAKER HP

Tungaloy Report No. 518S3-G

Economical **MiniForce-Turn** 6-cornered **CBN** inserts now available with HP chipbreaker





For more information

HP chipbreaker with WavyJoint brazing technology provides predictable tool life and excellent chip control

UNIQUE 6QS-WXGU0403**R/L-HP INSERTS

Double-sided positive geometry (with HP chipbreaker)

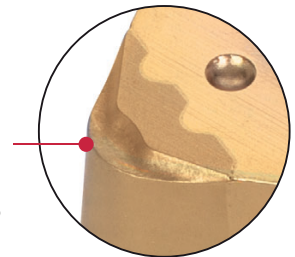


BXA10



BXA20

Optimized cutting edge design for low cutting forces



EXCELLENT CHIP CONTROL

HP chipbreaker provides excellent chip control in finish machining of hardened steel parts while eliminating chip packing during continuous cuts of I.D. turning operations.

HARDBREAKER HP



Competitor's ISO insert (w/o chipbreaker)



- H** Insert : 6QS-WXGU040304L-HP BXA10
 Toolholder : A16Q-SWLXR04-D180
 Workpiece material : SCM420 (60HRC)
 Cutting speed : $V_c = 150$ m/min
 Feed : $f = 0.1$ mm/rev
 Depth of cut : $a_p = 0.1$ mm
 Coolant : Wet
 Application : Continuous cut, I.D. turning

LOW CUTTING FORCES

HP chipbreaker features soft cutting geometry for reduced cutting forces while eliminating chatter during continuous cuts of I.D. turning operations that use long overhang tool setup.



| | Tool overhang (mm) | | | | | | |
|---|--------------------|----|----|---------|---------|---------|---------|
| | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| HARDBREAKER HP | OK | | | | | | Chatter |
| Competitor's ISO insert (w/o chipbreaker) | OK | OK | OK | Chatter | Chatter | Chatter | Chatter |

■ OK
■ Chatter

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CBN INSERTS POSITIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

| Shape | Designation | Material | | | | | | | | | | Dimension (mm) | | | | | | Edge prep. | | | | | Chipbreaker |
|---|--------------------|----------|---|---|---|---|---|----------------|----|----|----|----------------|----|----------|----|---|----|------------|---|-------|---|---|-------------|
| | | P | M | K | N | S | H | No. of corners | LE | RE | IC | S | D1 | Standard | SP | L | LF | LC | H | Wiper | | | |
| | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
|  | 6QS-WXGQ040302SPR | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | 6QS-WXGQ040302SPL | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | 6QS-WXGQ040304SPR | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | 6QS-WXGQ040304SPL | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | 6QS-WXGQ040308SPR | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | 6QS-WXGQ040308SPL | ● | ● | | | | | | | | | | | | | | | | | | | | |
|  | 6QS-WXGU040304R-HP | ● | ● | | | | | | | | | | | | | | | | | | ○ | | |
| | 6QS-WXGU040304L-HP | ● | ● | | | | | | | | | | | | | | | | | | | ○ | |
| | 6QS-WXGU040308R-HP | ● | ● | | | | | | | | | | | | | | | | | | | ○ | |
| | 6QS-WXGU040308L-HP | ● | ● | | | | | | | | | | | | | | | | | | | ○ | |

- : New
- : Line-up

STANDARD CUTTING CONDITIONS

| ISO | Grade | Edge preparation | Workpiece condition | Cutting speed Vc (m/min) | Depth of cut ap (mm) | Feed f (mm/rev) |
|-----|-------|------------------|---------------------|--------------------------|----------------------|-----------------|
| H | BXA10 | No symbol | Continuous | 100 - 230 | 0.05 - 0.5 | 0.03 - 0.3 |
| | | | Light interrupted | 100 - 230 | 0.05 - 0.5 | 0.03 - 0.2 |
| | | -HP | Continuous | 100 - 230 | 0.05 - 0.2 | 0.03 - 0.2 |
| | BXA20 | No symbol | Continuous | 60 - 180 | 0.05 - 0.5 | 0.03 - 0.3 |
| | | | Interrupted | 60 - 180 | 0.05 - 0.5 | 0.03 - 0.2 |
| | | -HP | Continuous | 60 - 180 | 0.05 - 0.2 | 0.03 - 0.2 |

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Dec. 2021 (TJ)