

Grooving System

GY Series

New coated
CBN grade
Expansion

Grooving Revolution

■ Innovative clamping system ensures reliable grooving.

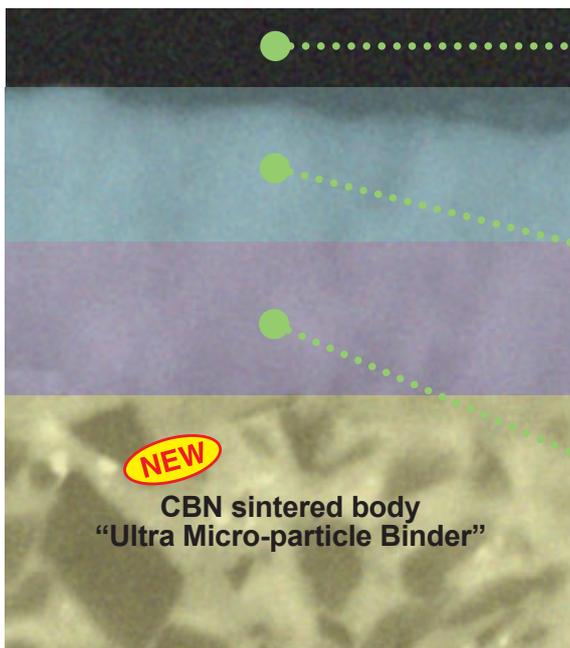


Coated CBN Grade for High Hardened Steel Turning

BC8110

Longer tool life with a coated CBN grade when turning hardened steels.

Newly developed special ceramic coating



Prevention of welding

Peeling of the coating is prevented by improving welding resistance.

NEW

TiAlSiN Coating

Improved wear and chipping resistance.

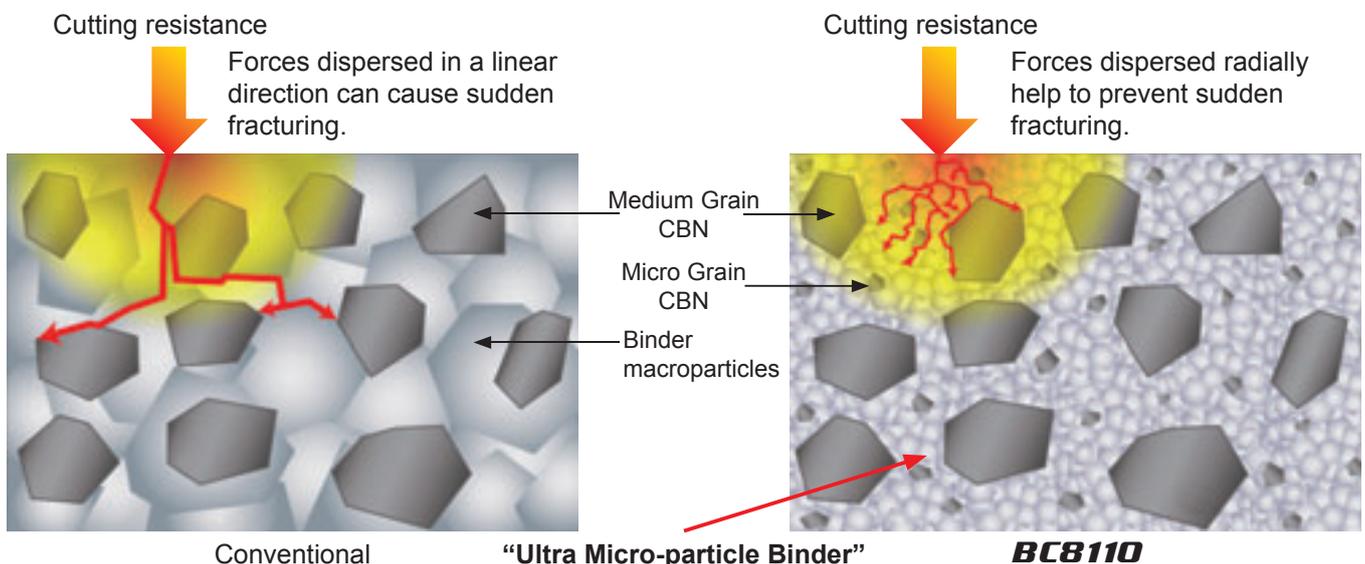
TiAlN Coating

Improved adhesion to the CBN surface provides increased peeling resistance.

NEW
CBN sintered body
"Ultra Micro-particle Binder"

The newly developed "Ultra Micro-particle Binder" prevents sudden fracture

Dispersal of the new Ultra Micro-particle Binder in BC8110 prevents linear crack development that can cause sudden fracturing.



INSERTS

| Applications | Geometry | Order Number | Stock | Seat Size | Dimensions (mm) | | | |
|--------------|---|---------------------------|--------|-----------|-----------------|-----------|-----|-------|
| | | | CBN | | CW | | RE | L |
| | | | BC8110 | | Grooving Width | Tolerance | | |
| For Grooving | Flat Top (For Hardened material) | GY1G0200D020N-GFGS | ● | D | 2.00 | ±0.03 | 0.2 | 20.70 |
| | | GY1G0239E020N-GFGS | ● | E | 2.39 | ±0.03 | 0.2 | 20.70 |
| | | GY1G0250E020N-GFGS | ● | E | 2.50 | ±0.03 | 0.2 | 20.70 |
| | | GY1G0300F020N-GFGS | ● | F | 3.00 | ±0.03 | 0.2 | 20.70 |
| | | GY1G0318F020N-GFGS | ● | F | 3.18 | ±0.03 | 0.2 | 20.70 |
| | | GY1G0400G020N-GFGS | ● | G | 4.00 | ±0.03 | 0.2 | 25.65 |
| | | GY1G0475H020N-GFGS | ● | H | 4.75 | ±0.03 | 0.2 | 25.65 |
| | | GY1G0500H020N-GFGS | ● | H | 5.00 | ±0.03 | 0.2 | 25.65 |
| | | GY1G0600J020N-GFGS | ● | J | 6.00 | ±0.03 | 0.2 | 25.65 |

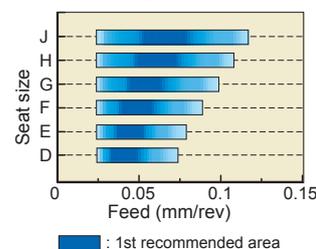
RECOMMENDED CUTTING CONDITIONS

- For External Grooving
Recommended cutting speed(m/min)

| Work Material | Hardness | Cutting Speed (m/min) | | |
|-------------------------|----------|-----------------------|--------|-----|
| | | 50 | 100 | 150 |
| H Hardened steel | 50HRC≤ | | 80 120 | |

Recommended feed rate and depth of cut Flat Top GFGS (CBN)

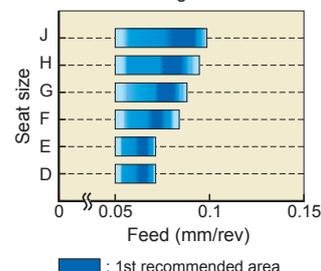
- Grooving



- For Face Grooving
Recommended cutting speed(m/min)

| Work Material | Hardness | Cutting Speed (m/min) | | |
|-------------------------|----------|-----------------------|--------|-----|
| | | 50 | 100 | 150 |
| H Hardened steel | 50HRC≤ | | 60 100 | |

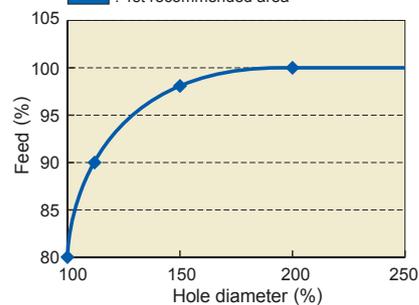
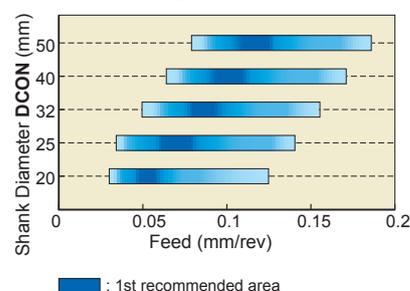
- Recommended feed rate For Grooving



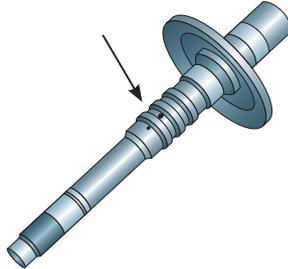
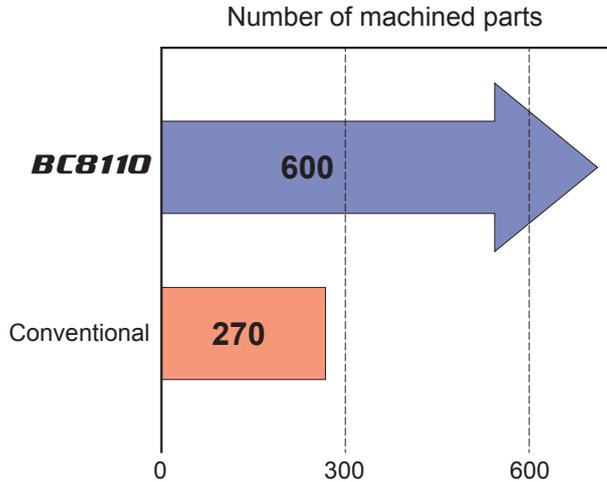
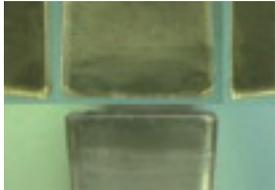
- For Internal Grooving
Recommended cutting speed(m/min)

| Work Material | Hardness | Cutting Speed (m/min) | | |
|-------------------------|----------|-----------------------|--------|-----|
| | | 50 | 100 | 150 |
| H Hardened steel | 50HRC≤ | | 60 100 | |

- Recommended feed rate For Grooving



APPLICATION EXAMPLES

| Tool | | GY1G0200D020N-GFGS | | | | | | | |
|--------------------|--------------------------|---|--|------|--------------------------|--------|-----|--------------|-----|
| Work piece | |  | | | | | | | |
| Component | | Input shaft | | | | | | | |
| Cutting Conditions | Cutting Speed (m/min) | 130 | | | | | | | |
| | Feed (mm/rev) | 0.10 | | | | | | | |
| | Depth of Cut (mm) | 0.12 (Depth of groove:2.2 mm) | | | | | | | |
| Cutting mode | | Wet | | | | | | | |
| Results | | <p style="text-align: center;">Number of machined parts</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Tool</th> <th>Number of machined parts</th> </tr> </thead> <tbody> <tr> <td>BC8110</td> <td>600</td> </tr> <tr> <td>Conventional</td> <td>270</td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>BC8110 600pcs</p> </div> <div style="text-align: center;">  <p>Conventional 270pcs</p> </div> </div> | | Tool | Number of machined parts | BC8110 | 600 | Conventional | 270 |
| Tool | Number of machined parts | | | | | | | | |
| BC8110 | 600 | | | | | | | | |
| Conventional | 270 | | | | | | | | |

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

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(Tools specifications subject to change without notice.)