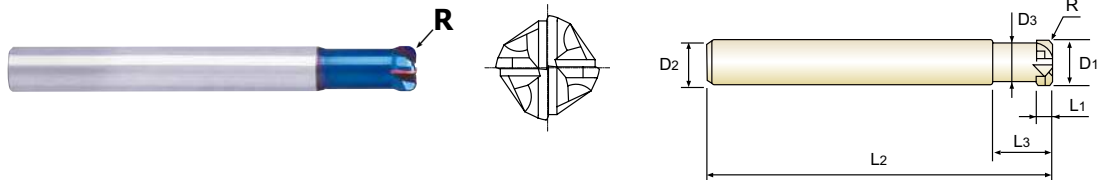


**CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS HIGH FEED**

- VOLLHARTMETALL, 4 SCHNEIDEN EXTER KURZ ECKENRADIUS HOCHVORSCHUB
- Fraise carbure, 4 dents, torique, grande avance, extra-courte
- 4 TAGLIANTI, TORICA

- ▶ Excellent wear resistance at heavy feed rates on high hardened material.
- ▶ Designed with reduced clearance angles and short flutes for strength.
- ▶ High hardness & heat resistance coating for long life in dry applications.

- ▶ Hervorragende Verschleißigenschaften bei hohen Schnittwerten in gehärteten Materialien
- ▶ Mit reduzierten Freiwinkeln und kurzen Spannuten für hohe Festigkeiten konstruiert.
- ▶ Große Härte u. hitzebeständige Beschichtung für lange Lebensdauer bei Trockenbearbeitung



Unit : mm

| EDP No.    | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|------------|---------------|---------------|----------------|---------------|--------------------|----------------|---------------|
|            | R (±0.005)    | D1            | D2             | L1            | L3                 | L2             | D3            |
| G8B5902005 | R0.5          | 2.0           | 6              | 1             | 6                  | 50             | 1.8           |
| G8B5903005 | R0.5          | 3.0           | 6              | 1.2           | 8                  | 50             | 2.8           |
| G8B5904005 | R0.5          | 4.0           | 6              | 1.5           | 10                 | 50             | 3.8           |
| G8B5906005 | R0.5          | 6.0           | 6              | 2.5           | 12                 | 60             | 5.4           |
| G8B5906010 | R1.0          | 6.0           | 6              | 2.5           | 12                 | 60             | 5.4           |
| G8B5908010 | R1.0          | 8.0           | 8              | 3.5           | 16                 | 60             | 7.2           |
| G8B5908020 | R2.0          | 8.0           | 8              | 3.5           | 16                 | 60             | 7.2           |
| G8B5910010 | R1.0          | 10.0          | 10             | 4             | 20                 | 70             | 9             |
| G8B5910020 | R2.0          | 10.0          | 10             | 4             | 20                 | 70             | 9             |
| G8B5912020 | R2.0          | 12.0          | 12             | 5             | 25                 | 80             | 11            |
| G8B5912030 | R3.0          | 12.0          | 12             | 5             | 25                 | 80             | 11            |

| Mill Dia. Tolerance (mm) | Corner Radius Tolerance (mm) | Shank Dia. Tolerance |
|--------------------------|------------------------------|----------------------|
| 0 ~ -0.02                | ± 0.005                      | h5                   |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.

**Comparison of the endteeth shape**

- Reduced clearance angles and short flutes strengthens corner radius and reduces chattering
- Extra-short flute length for high rigidity
- Heavy core with reduced diameter allows greater depths and maximum rigidity

◎ : Excellent ○ : Good

| ISO Material Description | P                      |     |                        |     |     |   |     |     |                        |     | M                                  |     |     | K               |     |                |                   |                    |                   |     |                     |
|--------------------------|------------------------|-----|------------------------|-----|-----|---|-----|-----|------------------------|-----|------------------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-------------------|-----|---------------------|
|                          | Non-alloy steel        |     |                        |     |     | Low alloy steel                           |     |     |                        |     | High alloyed steel, and tool steel |     |     | Stainless steel |     |                | Grey cast iron    |                    | Nodular cast iron |     | Malleable cast iron |
| VDI 3323                 | 1                      | 2   | 3                      | 4   | 5   | 6   | 7   | 8   | 9                      | 10  | 11                                 | 12  | 13  | 14              | 15  | 16             | 17                | 18                 | 19                | 20  |                     |
| HRC                      |                        |     |                        |     |     |   |     |     |                        |     |                                    |     |     |                 |     |                |                   |                    |                   |     |                     |
| HB                       | 125                    | 190 | 250                    | 270 | 300 | 180                                       | 275 | 300 | 350                    | 200 | 325                                | 200 | 240 | 180             | 180 | 260            | 160               | 250                | 130               | 230 |                     |
| Recommend                |                        |     |                        |     | ○   |   |     |     | ○                      | ○   |                                    |     |     |                 |     |                |                   |                    |                   |     |                     |
| ISO Material Description | N                      |     |                        |     |     | S   |     |     |                        |     | H                                  |     |     |                 |     |                |                   |                    |                   |     |                     |
|                          | Aluminum-wrought alloy |     | Aluminum-cast, alloyed |     |     | Copper and Copper Alloys (Bronze / Brass) |     |     | Non Metallic Materials |     | Heat Resistant Super Alloys        |     |     | Titanium Alloys |     | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |                   |     |                     |
| VDI 3323                 | 21                     | 22  | 23                     | 24  | 25  | 26  | 27  | 28  | 29                     | 30  | 31                                 | 32  | 33  | 34              | 35  | 36             | 37                | 38                 | 39                | 40  | 41                  |
| HRC                      |                        |     |                        |     |     |   |     |     |                        |     |                                    |     |     |                 |     |                |                   |                    |                   |     |                     |
| HB                       | 60                     | 100 | 75                     | 90  | 130 | 110                                       | 90  | 100 |                        |     | 200                                | 280 | 250 | 350             | 320 | 400 Rm         | 1050 Rm           | 550                | 630               | 400 | 550                 |
| Recommend                |                        |     |                        |     |     |   |     |     |                        |     |                                    |     |     |                 |     |                |                   | ◎                  | ◎                 | ○   | ◎                   |



SELECTION GUIDE

HSS



| SERIES             | G8B59         | G8B54                | G8A46          | G8A54          |
|--------------------|---------------|----------------------|----------------|----------------|
| FLUTE              | 4             | 4                    | 2              | 2              |
| HELIX ANGLE        | 0°            | 0°                   | 30°            | 30°            |
| CUTTING EDGE SHAPE | CORNER RADIUS | CORNER RADIUS        | BALL NOSE      | BALL NOSE      |
| SIZE MIN           | D2.0          | D2.0                 | R0.05          | R0.25          |
| SIZE MAX           | D12.0         | D16.0                | R2.0           | R1.0           |
| PAGE               | 105           | 106                  | 107            | 111            |
|                    | HIGH FEED     | HIGH FEED LONG SHANK | RIB PROCESSING | RIB PROCESSING |
|                    | Blue Coating  | Blue Coating         | Blue Coating   | Blue Coating   |

SOLID CARBIDE  
**X5070**  
END MILLS

High Hardened Steels HRc45 to HRc70,  
High Speed Machining, Dry Cutting



Please visit  
[globalyg1.com/mat](http://globalyg1.com/mat)  
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 139

| ISO | VDI 3323        | Material Description                      | Composition / Structure / Heat Treatment       | HB       | HRc |    |   |   |   |
|-----|-----------------|---|--|----------|-----|----|---|---|---|
| P   | 1               | Non-alloy steel                           | About 0.15% C Annealed                         | 125      |     |    |   |   |   |
|     | 2               |   | About 0.45% C Annealed                         | 190      | 13  |    |   |   |   |
|     | 3               |   | About 0.45% C Quenched & Tempered              | 250      | 25  |    |   |   |   |
|     | 4               |   | About 0.75% C Annealed                         | 270      | 28  |    |   |   |   |
|     | 5               |   | About 0.75% C Quenched & Tempered              | 300      | 32  | ○  | ○ | ○ | ○ |
|     | 6               | Low alloy steel                           | Annealed                                       | 180      | 10  |    |   |   |   |
|     | 7               |   | Quenched & Tempered                            | 275      | 29  |    |   |   |   |
|     | 8               |   | Quenched & Tempered                            | 300      | 32  | ○  | ○ | ○ | ○ |
|     | 9               |   | Quenched & Tempered                            | 350      | 38  | ○  | ○ | ○ | ○ |
|     | 10              |   | High alloyed steel, and tool steel             | Annealed | 200 | 15 |   |   |   |
|     | 11              | Quenched & Tempered                       |  | 325      | 35  | ○  | ○ | ○ | ○ |
| M   | 12              | Stainless steel                           | Ferritic / Martensitic Annealed                | 200      | 15  |    |   |   |   |
|     | 13              |   | Martensitic Quenched & Tempered                | 240      | 23  |    |   |   |   |
|     | 14              |   | Austenitic                                     | 180      | 10  |    |   |   |   |
| K   | 15              | Grey cast iron                            | Pearlitic / ferritic                           | 180      | 10  |    |   |   |   |
|     | 16              |   | Pearlitic (Martensitic)                        | 260      | 26  |    |   |   |   |
|     | 17              | Nodular cast iron                         | Ferritic                                       | 160      | 3   |    |   |   |   |
|     | 18              |   | Pearlitic                                      | 250      | 25  |    |   |   |   |
|     | 19              | Malleable cast iron                       | Ferritic                                       | 130      |     |    |   |   |   |
| 20  | Pearlitic       |   | 230  | 21       |     |    |   |   |   |
| N   | 21              | Aluminum-wrought alloy                    | Not Curable                                    | 60       |     |    |   |   |   |
|     | 22              |   | Curable Hardened                               | 100      |     |    |   |   |   |
|     | 23              | Aluminum-cast, alloyed                    | ≤ 12% Si, Not Curable                          | 75       |     |    |   |   |   |
|     | 24              |   | ≤ 12% Si, Curable Hardened                     | 90       |     |    |   |   |   |
|     | 25              |   | > 12% Si, Not Curable                          | 130      |     |    |   |   |   |
|     | 26              | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1%                          | 110      |     |    |   |   |   |
|     | 27              |   | CuZn, CuSnZn (Brass)                           | 90       |     |    |   |   |   |
|     | 28              |   | CuSn, lead-free copper and electrolytic copper | 100      |     |    |   |   |   |
|     | 29              | Non Metallic Materials                    | Duroplastic, Fiber Reinforced Plastic          |          |     |    |   |   |   |
|     | 30              |   | Rubber, Wood, etc.                             |          |     |    |   |   |   |
| S   | 31              | Heat Resistant Super Alloys               | Fe Based                                       | Annealed | 200 | 15 |   |   |   |
|     | 32              |   |  | Cured    | 280 | 30 |   |   |   |
|     | 33              |   | Ni or Co Based                                 | Annealed | 250 | 25 |   |   |   |
|     | 34              |   |  | Cured    | 350 | 38 |   |   |   |
|     | 35              |   |  | Cast     | 320 | 34 |   |   |   |
| 36  | Titanium Alloys | Pure Titanium                             | 400 Rm   |          |     |    |   |   |   |
| 37  |                 | Alpha + Beta Alloys Hardened              | 1050 Rm  |          |     |    |   |   |   |
| H   | 38              | Hardened steel                            | Hardened                                       | 550      | 55  | ◎  | ◎ | ◎ | ◎ |
|     | 39              |   | Hardened                                       | 630      | 60  | ◎  | ◎ | ◎ | ◎ |
|     | 40              | Chilled Cast Iron                         | Cast   | 400      | 42  | ○  | ○ | ○ | ○ |
|     | 41              | Hardened Cast Iron                        | Hardened                                       | 550      | 55  | ◎  | ◎ | ◎ | ◎ |