

**Garant**
**GARANT Diabolo solid carbide micro slot drill, TiAlN, Ø DC × L1: 2X22mm**

**Order data**

|              |               |
|--------------|---------------|
| Order number | 201631 2X22   |
| GTIN         | 4045197933218 |
| Item class   | 11X           |

**Description**
**Version:**
**GARANT Diabolo:**

Special geometry, coating and carbide **for hard machining in the high-performance field.** Suitable even for **machining electrolytic copper.** Double-relief ground 2 chamfers hollow ground for high-precision hard machining.

Recess angle  $\alpha = 16^\circ$ .

Tolerances:

· **Neck Ø:  $D_1 = 0 / -0.01$  mm.**

**Note:**

At greater tool overhang lengths, use a reduced value for  $a_p$ !

Values for:

slots milled from solid:  $a_p = 0.05 \times D \times a_{p \text{ korr}}$

side milling:  $a_p = 0.1 \times D \times a_{p \text{ korr}}$

**To calculate the feed rate  $vf$  please use the actual speed of the machine (the maximum possible speed)! e.g:  $vf = 18000 \text{ [rpm]} \times fz \text{ [mm/Z]} \times z$**

**Technical description**

|   |          |
|---|----------|
| Overhang length $L_1$ incl. recess            | 22 mm    |
| Feed $f_z$ for slot milling in steel < 65 HRC | 0.02 mm  |
| Overall length L                              | 60 mm    |
| Shank Ø $D_s$                                 | 4 mm     |
| Correction factor $a_{p \text{ corr}}$        | 0.5      |
| Feed $f_z$ for side milling in steel < 65 HRC | 0.025 mm |

|   |                                      |
|---|--------------------------------------|
| Shank                                     | DIN 6535 HA to h5                    |
| Tolerance nominal $\varnothing$           | 0 / -0,005                           |
| Direction of infeed                       | horizontal, oblique and vertical     |
| Recess $\varnothing D_1$                  | 1.91 mm                              |
| Helix angle                               | 30 degrees                           |
| Flute length $L_c$                        | 3 mm                                 |
| Cutting edge $\varnothing D_c$            | 2 mm                                 |
| No. of teeth Z                            | 2                                    |
| Corner chamfer angle                      | 90 degrees                           |
| Series                                    | Diabolo                              |
| Coating                                   | TiAlN                                |
| Tool material                             | Solid carbide                        |
| Standard                                  | Manufacturer's standard              |
| Type                                      | H                                    |
| Cutting width $a_e$ for milling operation | Full slot cutting depth $1 \times D$ |
| Cutting width $a_e$ for milling operation | $0.1 \times D$ for side milling      |
| Through-coolant                           | no                                   |
| Colour ring                               | red                                  |
| Type of product                           | End / face mill                      |

## User data

|                                | Suitability                               | $V_c$     | ISO code |
|--------------------------------|---|-----------|----------|
| Steel < 750 N/mm <sup>2</sup>  | suitable only under restricted conditions | 200 m/min | P        |
| Steel < 900 N/mm <sup>2</sup>  | suitable only under restricted conditions | 200 m/min | P        |
| Steel < 1100 N/mm <sup>2</sup> | suitable                                  | 190 m/min | P        |
| Steel < 1400 N/mm <sup>2</sup> | suitable                                  | 170 m/min | P        |
| Steel < 50 HRC                 | suitable                                  | 120 m/min | H        |

|                              |   |           |   |
|------------------------------|---|-----------|---|
| Steel < 55 HRC               | suitable                                  | 100 m/min | H |
| Steel < 60 HRC               | suitable                                  | 72 m/min  | H |
| Steel < 65 HRC               | suitable                                  | 55 m/min  | H |
| Steel < 67 HRC               | suitable                                  | 50 m/min  | H |
| Steel < 70 HRC               | suitable                                  | 45 m/min  | H |
| INOX < 900 N/mm <sup>2</sup> | suitable                                  | 90 m/min  | M |
| INOX > 900 N/mm <sup>2</sup> | suitable                                  | 80 m/min  | M |
| CuZn                         | suitable only under restricted conditions | 140 m/min | N |
| wet maximum                  | suitable only under restricted conditions |           |   |
| wet minimum                  | suitable only under restricted conditions |           |   |
| dry                          | suitable                                  |           |   |
| Air                          | suitable                                  |           |   |