

**Garant**
**Diabolo solid carbide torus cutter R1 0.1, TiAlN, Ø DC × L1: 1X20 mm**

**Order data**

|              |               |
|--------------|---------------|
| Order number | 206156 1X20   |
| GTIN         | 4045197934123 |
| 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 with 2 chamfers hollow ground for high-precision hard machining.

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

Tolerances:

- **Corner radius:  $R_1 = \pm 0.0025$  mm.**
- **Neck Ø:  $D_1 = 0 / -0.01$  mm.**

**Note:**

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

Values for:

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

copying:  $a_p = 0.05 \times D \times a_{p \text{ korr}}$

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

No. of teeth Z: 2

Helix angle: 30 degrees

Shank: DIN 6535 HA to h5

No. of teeth Z: 2

Flute length  $L_c$ : 1 mm

Corner radius  $R_1$ : 0.1 mm

Overhang length  $L_1$  incl. recess: 20 mm

Recess Ø  $D_1$ : 0.95 mm

Overall length L: 60 mm

**Technical description**

|   |                                  |
|---|----------------------------------|
| Feed $f_z$ for side milling in steel < 65 HRC | 0.01 mm                          |
| Feed $f_z$ for copy milling in steel < 65 HRC | 0.01 mm                          |
| Correction factor $a_{p\ corr}$               | 0.04                             |
| Recess $\varnothing D_1$                      | 0.95 mm                          |
| Cutting edge $\varnothing D_c$                | 1 mm                             |
| Overhang length $L_1$ incl. recess            | 20 mm                            |
| No. of teeth $Z$                              | 2                                |
| Shank $\varnothing D_s$                       | 4 mm                             |
| Flute length $L_c$                            | 1 mm                             |
| Helix angle                                   | 30 degrees                       |
| Overall length $L$                            | 60 mm                            |
| Corner radius $R_1$                           | 0.1 mm                           |
| Shank   | DIN 6535 HA to h5                |
| Series  | Diabolo                          |
| Coating                                       | TiAlN                            |
| Tool material                                 | Solid carbide                    |
| Standard                                      | Manufacturer's standard          |
| Type  | H                                |
| Tolerance nominal $\varnothing$               | 0 / -0.005                       |
| Direction of infeed                           | horizontal, oblique and vertical |
| Cutting width $a_e$ for milling operation     | 0.05×D for copy milling          |
| Cutting width $a_e$ for milling operation     | 0.05×D for copy milling          |
| Through-coolant                               | no                               |
| Colour ring                                   | red                              |
| Type of product                               | End mill                         |