

**Garant**
**Solid carbide micro slot drill, Diamond, Ø DC × L1: 1X20mm**

**Order data**

|              |               |
|--------------|---------------|
| Order number | 209700 1X20   |
| GTIN         | 4045197917218 |
| Item class   | 10Y           |

**Description**
**Version:**

With **crystalline diamond sp<sup>3</sup> coating**. For the **highest demands regarding performance and precision** in fibre-reinforced composites, CRP, GRP, and graphite. **Extremely tight tolerances** ensure maximum accuracy. Double relief ground with 2 hollow-ground chamfers. **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:  $a_p = 0.1 \times D \times a_{p \text{ korr}}$

side milling:  $a_p = 0.2 \times D \times a_{p \text{ korr}}$

**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**

|                                         |                                  |
|-----------------------------------------|----------------------------------|
| Direction of infeed                     | horizontal, oblique and vertical |
| Feed $f_z$ for slot milling in graphite | 0.016 mm                         |
| Feed $f_z$ for side milling in graphite | 0.02 mm                          |
| Recess Ø $D_1$                          | 0.95 mm                          |
| No. of teeth $Z$                        | 2                                |
| Flute length $L_c$                      | 1.5 mm                           |

|                                           |                             |
|-------------------------------------------|-----------------------------|
| Shank $\varnothing D_s$                   | 4 mm                        |
| Tolerance nominal $\varnothing$           | 0 / -0.005                  |
| Shank                                     | DIN 6535 HA to h5           |
| Overall length L                          | 60 mm                       |
| Cutting edge $\varnothing D_c$            | 1 mm                        |
| Overhang length $L_1$ incl. recess        | 20 mm                       |
| Helix angle                               | 30 degrees                  |
| Correction factor $a_{p\ corr}$           | 0.08                        |
| Corner chamfer angle                      | 90 degrees                  |
| Coating                                   | Diamond                     |
| Tool material                             | Solid carbide               |
| Standard                                  | Manufacturer's standard     |
| Cutting width $a_e$ for milling operation | 0.5×D for side milling      |
| Cutting width $a_e$ for milling operation | Full slot cutting depth 1×D |
| Through-coolant                           | no                          |
| Colour ring                               | black                       |
| Type of product                           | End / face mill             |

## User data

|                    | Suitability | $V_c$     | ISO code |
|--------------------|-------------|-----------|----------|
| PVDF GF20          | suitable    | 200 m/min | N        |
| POM GF25           | suitable    | 190 m/min | N        |
| PA 66 GF30         | suitable    | 170 m/min | N        |
| PEEK GF30          | suitable    | 150 m/min | N        |
| PTFE CF25          | suitable    | 180 m/min | N        |
| PEEK CF30          | suitable    | 160 m/min | N        |
| Hybrids            | suitable    |           |          |
| Honeycomb sandwich | suitable    | 350 m/min | N        |
| GRP                | suitable    | 190 m/min | N        |

|             |          |           |   |
|-------------|----------|-----------|---|
| GRP, CRP    | suitable | 190 m/min | N |
| Graphite    | suitable | 340 m/min | N |
| wet minimum | suitable |           |   |
| dry         | suitable |           |   |
| Air         | suitable |           |   |