

**Garant**
**Solid carbide torus cutter R1 0.1, Diamond, Ø DC × L1: 1X20mm**

**Order data**

Order number	209716 1X20
GTIN	4045197918253
Item class	11Y

**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:

- **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:

copying:  $a_p = 0.10 \times D \times a_{p \text{ korr}}$

side milling:  $a_p = 0.20 \times D \times a_{p \text{ korr}}$

**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**

Recess Ø $D_1$	0.95 mm
Shank Ø $D_s$	4 mm
Overall length L	60 mm
No. of teeth Z	2
Shank	DIN 6535 HA to h5
Flute length $L_c$	1 mm

Feed $f_z$ for side milling in graphite	0.02 mm
Cutting edge $\varnothing D_c$	1 mm
Corner radius $R_1$	0.1 mm
Overhang length $L_1$ incl. recess	20 mm
Feed $f_z$ for copy milling in graphite	0.02 mm
Helix angle	30 degrees
Correction factor $a_{p\text{ corr}}$	0.08
Coating	Diamond
Tool material	Solid carbide
Standard	Manufacturer's standard
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	0.5×D for side milling
Through-coolant	no
Colour ring	black
Type of product	Torus cutter

## 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		