

**Garant**
**Diabolo solid carbide torus cutter R1 0.5, TiAlN, Ø DC × L1: 3X20 mm**

**Order data**

Order number	206159 3X20
GTIN	4045197935816
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  $L_c$ : 4.5 mm

Corner radius  $R_1$ : 0.5 mm

Overhang length  $L_1$  incl. recess: 20 mm

Recess Ø  $D_1$ : 2.91 mm

Overall length L: 55 mm

**Technical description**

Corner radius $R_1$	0.5 mm
Feed $f_z$ for copy milling in steel < 65 HRC	0.03 mm
Feed $f_z$ for side milling in steel < 65 HRC	0.03 mm
Overall length L	55 mm
Recess $\varnothing D_1$	2.91 mm
Cutting edge $\varnothing D_c$	3 mm
Helix angle	30 degrees
Shank $\varnothing D_s$	4 mm
Correction factor $a_{p\text{corr}}$	0.9
Shank	DIN 6535 HA to h5
Flute length $L_c$	4.5 mm
Overhang length $L_1$ incl. recess	20 mm
No. of teeth Z	2
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