

**Garant**
**GARANT Diabolo solid carbide micro slot drill, TiAlN, Ø DC × L1: 1,5X20mm**

**Order data**

Order number	201631 1,5X20
GTIN	4045197933027
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:  $a_p = 0.05 \times D \times a_p$  korr

side milling:  $a_p = 0.1 \times D \times a_p$  korr

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

**Technical description**

Shank Ø $D_s$	4 mm
Shank	DIN 6535 HA to h5
Flute length $L_c$	2.3 mm
Feed $f_z$ for slot milling in steel < 65 HRC	0.01 mm
Tolerance nominal Ø	0 / -0,005
Direction of infeed	horizontal, oblique and vertical

Correction factor $a_{p\text{ corr}}$	0.35
Helix angle	30 degrees
No. of teeth Z	2
Overall length L	55 mm
Feed $f_z$ for side milling in steel < 65 HRC	0.015 mm
Cutting edge $\varnothing D_c$	1.5 mm
Recess $\varnothing D_1$	1.44 mm
Cutting speed $v_c$ in steel < 65 HRC	27 m/min
Overhang length $L_1$ incl. recess	20 mm
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		