

Garant
GARANT Diabolo solid carbide micro slot drill, TiAlN, Ø DC × L1: 3X20mm

Order data

Order number	201631 3X20
GTIN	4045197933409
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

Cutting edge Ø D_c	3 mm
Direction of infeed	horizontal, oblique and vertical
Flute length L_c	4.6 mm
Shank Ø D_s	4 mm
Overhang length L_1 incl. recess	20 mm
Shank	DIN 6535 HA to h5

Feed f_z for slot milling in steel < 65 HRC	0.025 mm
No. of teeth Z	2
Helix angle	30 degrees
Recess $\varnothing D_1$	2.91 mm
Feed f_z for side milling in steel < 65 HRC	0.03 mm
Tolerance nominal \varnothing	0 / -0,005
Cutting speed v_c in steel < 65 HRC	36 m/min
Overall length L	60 mm
Correction factor $a_{p\text{corr}}$	0.9
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 ²	suitable only under restricted conditions	200 m/min	P
Steel < 900 N/mm ²	suitable only under restricted conditions	200 m/min	P
Steel < 1100 N/mm ²	suitable	190 m/min	P
Steel < 1400 N/mm ²	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 ²	suitable	90 m/min	M
INOX > 900 N/mm ²	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		