

**Garant**
**Solid carbide micro slot drill, DLC, Ø DC × L1: 3X20mm**

**Order data**

Order number	201140 3X20
GTIN	4045197913388
Item class	11X

**Description**
**Version:**

With **advanced DLC sp<sup>2</sup> coating**. For the **highest demands regarding performance and precision in aluminium materials**. **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:  $a_p = 0.25 \times D \times a_{p,corr}$   
 side milling:  $a_p = 0.5 \times D \times a_{p,corr}$   
**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
Flute length $L_c$	4.6 mm
Cutting edge Ø $D_c$	3 mm
Feed $f_z$ for side milling in cast aluminium	0.035 mm
Feed $f_z$ for slot milling in cast aluminium	0.03 mm
Tolerance nominal Ø	0 / -0.005
Overhang length $L_1$ incl. recess	20 mm
Recess Ø $D_1$	2.91 mm
No. of teeth Z	2

Shank $\varnothing D_s$	4 mm
Overall length L	60 mm
Shank	DIN 6535 HA to h5
Helix angle	30 degrees
Correction factor $a_{p,corr}$	0.9
Corner chamfer angle	90 degrees
Coating	DLC
Tool material	Solid carbide
Standard	Manufacturer's standard
Type	W
Cutting width $a_e$ for milling operation	0.5xD for side milling
Cutting width $a_e$ for milling operation	Full slot cutting depth 1xD
Through-coolant	no
Colour ring	yellow
Type of product	End / face mill

## User data

	Suitability	$V_c$	ISO code
Aluminium	suitable	480 m/min	N
Aluminium (short chipping)	suitable	440 m/min	N
Alu > 10% Si	suitable	400 m/min	N
PMMA acrylic	Suitable	200 m/min	N
PE-HD	Suitable	160 m/min	N
PA 66	Suitable	200 m/min	N
PEEK	Suitable	150 m/min	N
PF 31	Suitable	130 m/min	N
PVDF GF20	suitable	180 m/min	N
POM GF25	Suitable	160 m/min	N

PA 66 GF30	suitable	150 m/min	N
PEEK GF30	suitable	130 m/min	N
PTFE CF25	suitable	160 m/min	N
Honeycomb sandwich	suitable only under restricted conditions	300 m/min	N
Cu	suitable	160 m/min	N
CuZn	suitable	200 m/min	N
wet maximum	suitable		
wet minimum	suitable		
dry	suitable only under restricted conditions		
Air	suitable		